Trade liberalisation and wages in South African manufacturing

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Abstract

There is a popular perception that recent trade liberalisation in South Africa has been bad for jobs. This paper examines this by investigating the relationship between tariffs, both levels and changes, and wages in the manufacturing sector. This is done through matching individual labour force data with industry level tariff data and estimating Mincerian earnings equations. The results suggest that an identical individual in a low tariff sector earns more than one in a high tariff sector. Furthermore, wages are higher in those sectors that have undergone greater liberalisation. These results are robust to controlling for sector characteristics as well as selectivity into manufacturing jobs. Contrary to popular perception, these results suggest that trade liberalisation is good for wages. Two possible explanations of this positive relationship are investigated. The first is that trade liberalisation has resulted in low wage job shedding in those sectors that have liberalised. There is some evidence that this is occurring. The second is that wages in liberalising sectors have risen relative to sectors where tariffs have remained the same – the evidence provided suggests that this may also be an explanation.

1. Introduction

There is a popular perception in South Africa that trade liberalisation that has occurred since 1994 has hurt jobs. In the academic literature there is debate on the extent of trade liberalisation since 1994 (see Cassim and van Seventer, 2006 and Edwards, 2006). Despite this, it is clear that both nominal and effective rates of protection in the South African manufacturing sector fell during the 1990s. Parallel to this debate on the extent of trade liberalisation has been the debate on the impact of trade liberalisation on the economy.[1] Empirical work suggests that trade liberalisation has changed the returns to various skills levels, benefiting both the most and least skilled but impacting negatively on the semi-skilled (Behar and Edwards, 2005). Furthermore, Abdi and Edwards (2002) find that "trade liberalisation has not negatively affected less skilled labour and thus cannot be responsible for the continued decline in employment among the less skilled." In fact they suggest that trade liberalisation may have positively affected the less skilled. This paper investigates the relationship between tariffs, liberalisation and wages further, but unlike previous work on South Africa, uses labour market data rather than aggregate or firm-level data.

Labour market data is matched with industry level data and tariff levels and changes at the 3-digit SIC level. This allows the links between wage levels and tariff levels and changes to be investigated. This also allows for individual worker characteristics, such age, race and skills, to be controlled for. There are two robust results that emerge from this paper. First, that workers employed in industries with low tariff levels earn higher wages. This is not because these industries employ people with different skills or education since these are controlled for. Second, workers who remain employed in industries that have liberalised tariffs have higher wage levels than those in non-liberalising industries. There are two possible explanations for these findings. The first is that liberalisation is associated with the shedding of low-wage jobs. Firms may remain open but change technology so as to employ fewer low skilled and low wage employees. Alternatively, low productivity, and thus low paying firms, may exit when faced with increased import competition. The second explanation is that liberalisation is associated with relative increases in wages. These two explanations are examined in the paper.

The paper is structured as follows. The next section provides the theoretical context and sketches what the relationship between trade liberalisation and wage is expected to be. Section 3 introduces the data to be used in the paper. Section 4 describes the methodology to be followed. The fifth section presents the results. Section 0 concludes.

[1] See for example Fedderke, Shin and Vaze (2003), Edwards (2005).

2. Trade Protection and Wages: Theoretical Background

This section very broadly lays out our expectations with regards to the effects of trade reform on wages. In particular, we discuss why one might expect wages to be influenced by trade and what the expected impact of trade on wages is. To this end, this section begins with a general discussion of inter-industry wages, the purpose of which is to explain why industry affiliation may influence wages in the first place. The predicted impact of trade liberalisation on wages is then explored.

Inter-industry wage differentials

The key feature of a perfectly competitive labour market is that workers are compensated according to their opportunity cost, which is a function of accumulated human capital and working conditions. Job characteristics which do not directly affect the utility of workers should not affect the level of wages, with equally productive workers receiving compensation packages that provide equal levels of utility. If an employee's industry is a significant factor in determining wages after controlling for the quality of labour and working conditions then one must look for alternative explanations that go beyond the standard competitive theory framework (Krueger and Summers, 1988).

Indeed, substantial evidence exists that workers with identical observable characteristics employed in jobs with identical observable characteristics receive on average different wages depending on the industry in which they are employed. As discussed in Romer (2001, p.456) several authors have investigated whether some industries pay systematically higher wages than others[2]. These authors begin by adding dummy variables for the industries that workers are employed in to wage regressions. A typical specification is:

$$\ln w_i = \alpha + \sum_{j=1}^{M} \beta_j X_{ij} + \sum_{k=1}^{N} \gamma_k D_{ik} + \varepsilon_i$$

where w_i is worker i's wage; X_{ij} are worker characteristics and D_{ik} are dummy variables for employment in different industries. In a competitive labour market where wages depend on worker's characteristics only and not on what industry they are employed in, one would expect the coefficients on the industry dummies to be zero (assuming that the X_j's adequately capture

[2] Dickens, W. and L. Katz (1987) "Inter-industry Wage Differences and Theories of Wage Determination", National Bureau of Economic Research Working Paper No. 2271 and Krueger, A. and L. Summers (1988) "Efficiency Wages and the Interindustry Wage Structure" Econometrica, 56 (March): 259-293.

workers' characteristics). However, Dickens and Katz (1987) and Krueger and Summer (1988) find that the estimated γ_k's are large.

There are several explanations for such inter-industry wage differentials. Competitive explanations for inter-industry wages argue that wage differentials are due to (i) unobserved differences in worker quality between industries and/or (ii) differences in job characteristics among industries which generate compensating wage differentials (Keane, 1991). However, Krueger and Summers (1988) present evidence that controlling for unobserved worker heterogeneity does not eliminate inter-industry wage differentials. They also find that observed working condition variables do not explain inter-industry wage differentials.

Alternatively, these inter-industry wage differentials have been viewed as supporting evidence for efficiency wage theories. These theories predict that, because of characteristics of their industry (such as market structure or the production process), some firms find it profitable to pay their workers wages above the market clearing rate. The wage differentials may be the result of the product market structure – monopolistic firms may be more inclined to share the rents with their workers as compared to the firms in competitive markets. There is evidence that the inter-industry wage differences represent genuine rents (Romer, 2001). Krueger and Summers (1988) find that workers in industries with higher estimated wage premiums quit much less often. They also find that workers who move from one industry to another on average have their wages change by nearly as much as the difference between the estimated wage premiums for the two industries.

Thaler (1989) identifies four industry characteristics that appear to be associated with the level of compensation: (i) firm size; (ii) profits and monopoly power; (iii) capital intensity; and (iv) union density.

(i) *Firm size*. Both plant size and firm size have significant positive influences on wage rates, even after controlling for worker's characteristics and the working conditions of the jobs.

(ii) *Ability to pay*. The second factor that has been found to be positively correlated with industry pay levels is the "ability to pay" as measured either by the market power or profitability of the firms.

(iii) *Capital intensity*. Industries with high capital labour ratios tend to pay higher wages.

(iv) *Union density*. The final factor that has been shown to be correlated with industry wage rates is union density. Most studies find that the unionization rate (the percentage of the workers in an industry who belong to a union) increases wages for both union members and non-union members in an industry.

Industry association therefore appears to be an important determinant of wages. The extent to which trade liberalisation is expected to impact on industry-specific returns is discussed below.

Trade theory predictions

The standard model used to analyse the channels through which trade impacts on the labour market is the two-sector two-factor two-country Heckscher-Ohlin (H-O) model[3]. The H-O model is a general equilibrium model that predicts patterns of trade and production based on national differences in factor endowments. The model assumes that there are no market distortions such as imperfect competition, labour unions, or taxes that would influence production or consumption decisions. Further, factors of production are assumed to be perfectly mobile between industries within each country. Hence, a single wage rate and rental rate on capital exists within each economy.

The model predicts that countries will export products that use their relatively abundant factors of production and import products that utilize the countries' scarce factors. As a result, trade will influence the price of factors of production – if a nation exports the services of its abundant factor, there must implicitly be an increase in demand for that factor, thus raising its price. The owners of a nation's abundant factors gain from trade, but the owners of the scarce factor are made worse off. The reason for this result is that trade in goods compensates for national scarcities in factor supplies. The model predicts that each country exports the services of its abundant factor, resulting in a higher demand for that factor, while it imports the services of its scarce factor, resulting in a fall in demand for that factor.

The H-O model is used as a basis to argue that trade liberalisation is important for raising wages and employment in developing countries, which are assumed to be labour abundant. However, the predicted impact of trade on middle-income countries, such as South Africa, is unclear. Indeed, a problem associated with the standard H-O model is that it does not consider the impact of trade liberalisation on middle- income countries, which compete against both developed and developing economies. Depending on the relative declines in protection of different products, a whole host of outcomes affecting relative wages are possible (Markusen and Venables (2005), Edwards (2005) and Fedderke *et al.* (2003a)).

[3] This discussion of the Heckscher-Ohlin and specific factors framework draws largely from Markusen, J., J.R. Melvin, K. Maskus, and W. Kaempfer, "International Trade: Theory and Applications," McGraw Hill (1995).

A literature exists that has explored the relationship between trade liberalisation and employment in South Africa based on the H-O framework.[4] In a recent study, Edwards and Behar (2005) use firm level data to investigate the impact of trade liberalization and technological change on the demand for factors in South Africa. They find evidence that trade liberalization and technological change have affected the skill structure of employment. Further, tariff liberalisation raised the return to capital relative to labour, but that the negative impact on labour is concentrated on semi-skilled workers. Tariff liberalisation mandated a rise in real returns to unskilled workers. They also note that even though tariff liberalisation mandated a decline in the return to labour, real wage rigidities have aggravated the impact of trade on employment. Behar and Edwards calculate that real wages grew by an average 2.7% per annum during the 1990s. Real wages of semi- and unskilled labour are estimated to have grown by approximately 4% per annum over this period. This leads the authors to conclude that the "lack of wage moderation in the face of increased international competition, will have encouraged firms to shed labour" (Behar and Edwards, p. 17).

For the purposes of our analysis, a limitation of the H-O model is that it predicts that trade will affect only economy-wide returns to factors, but not industry-specific returns. Since the model assumes that factors of production are perfectly mobile between industries within each country, a single rate for each factor exists within each economy. Therefore, if trade for labour-intensive goods is liberalised, this should reduce the average wage of the economy as the demand for labour decreases, but relative wages should remain the same as wages across industries are equalized. The HO model does not provide an adequate account for the widespread existence of inter-industry variation in wages for observationally comparable jobs (Pavcnik, *et al* (2004)).

The H-O assumption of free factor mobility between industries describes a state at which an economy can only arrive in the long run. If factors of production are not mobile between industries, but instead remain set in employment for some period of time, then we must adopt a short-run view in which at least one factor of production is immobile or is sector-specific. The specific-factors model, which can be interpreted as a short-run version of the H-O model, allows for the distinction between general-purpose factors that can move between sectors and factors that are specific to particular industries. The presence of specific factors means that they will have different prices within the economy.

The specific-factors model predicts that a relative price increase of a good benefits the specific factor used in that industry, reduces the real income of the other specific factor and has an ambiguous effect in the mobile factor. The general outcome of the model is therefore that trade

[4] Edwards (2005) provides a brief overview of the results and the various methodologies used in the literature.

benefits the factor that is specific to the export sector of each country, but hurts the factor specific to the import-competing sectors, with ambiguous effects on mobile factors. Accordingly, the model predicts a positive relationship between protection and industry wages which implies that sectors that experienced proportionately larger tariff reductions should be associated with a decrease in wages.

The above trade models assume perfectly competitive product and factor markets. By introducing imperfect competition, additional channels through which trade policy may impact wages are opened up (Pavcnik *et al.*, 2004). More specifically, trade is then expected to affect profitability and productivity, which in turn may affect wages. These two possibilities are explored.

Impact of trade on profitability

International trade is generally accepted as an important source of market discipline – international competition reduces market power of domestic firms, which reduces the ability of firms to raise prices above marginal costs. Since industries with high import protection face less competition, firms in those industries are expected to earn rents which may have been shared with workers. For instance, in profitable industries unions may be able to bargain over industry rents and secure higher wages. Indeed, as discussed by Thaler (1989), compensation levels are linked to the ability of the industry to pay, as measured by market power or profitability. Because trade liberalisation is likely to curtail domestic market power, profits of firms previously protected from foreign competition are expected to fall as a result of liberalisation. Accordingly, lower tariffs are associated with lower industry wages in such a scenario (Pavcnik *et al*, 2004).

Several international studies investigate the notion that domestic industries, which may have enjoyed oligopoly rents in a protected domestic market, are forced to behave more competitively when faced with increased international competition. Levinsohn (1993) terms this the "imports-as-a-discipline hypothesis". It states that in imperfectly competitive, import-competing industries, trade liberalisation gives rise to lower price-marginal cost ratios. This hypothesis is tested by Levinsohn using firm-level data from the Turkish manufacturing sector from 1983-1986. He finds support for the hypothesis in the data. All the industries that were imperfectly competitive prior to liberalisation experienced a decline in mark-ups with the onset of liberalisation. Furthermore, industries that experienced an increase in protection also experienced an increase in mark-ups. Thus, the experienced changes in mark-ups are consistent with the theory.

Harrison (1994) uses plant-level panel data for the manufacturing sector to explore changes in market power following the trade reforms in Cote d'Ivoire in 1985. The results suggest that price-cost margins fell in only a few sectors following reform. However, making use of the cross-sectional differences in import penetration and tariff rates across manufacturing, she finds that market power, as measured by price-cost margins, is significantly higher in sectors with lower import penetration and higher tariffs.

Kee and Hoekman (2003) investigate the impact of competition law on industry mark-ups over time and across a large number of countries. They find that relative to alternative policies that enhance contestability of markets, such as import competition, competition law does not play a significant role. Foreign competition is found to be a major source of market discipline in concentrated markets.

Within South Africa, several studies have analysed the impact of trade on mark-ups (Fedderke et al. (2003b) and Edwards and van de Winkel (2005). Employing tariff data, Edwards and van de Winkel investigate the impact of protection on mark-ups. They find that tariff liberalisation lowered average mark-ups in South African industries during the 1990's, and from 1995 especially. The relationship is robust to the choice of protection measure (scheduled tariffs, collection rates, effective rates of protection). Using import penetration values as an alternative measure for import competition, Edwards and van de Winkel again find evidence for the disciplining effect of international competition on the mark-up pricing behaviour of domestic firms in SA. Similar results are found by Fedderke et al. (2003b), who also employ import penetration measures.

Given that evidence exists that liberalisation has caused a decrease in mark-ups in South Africa, one might expect lower wages to be associated with the lower tariffs. However, as noted by Pavcnik *et al.* (2004) in the presence of unionization, it may be that unions extract the rents associated with protection in the form of employment guarantees rather than wages. Grossman (1984) studies the wage and employment behaviour of a unionised sector that faces increased international competition. A model is developed in the context of a monopoly union subject to majority rule, in which a seniority system for lay-offs apply. Grossman finds that the argument that union wage voting behaviour gives rise to wage stickiness in the face of international competition may hold true in certain cases.

This suggests that the nature of the wage-setting mechanism is an important consideration. For some industries, where workers do not have much bargaining power, wage responses will be largely determined by the industry labour market. However, where wages contain a rent

component, workers may be willing to trade off wages to protect jobs. Alternatively, they may prefer to maintain a high level of wages for those who remain employed, to the detriment of those who lose their jobs (Revenga, 1997).

Impact of trade on productivity

Productivity changes that arise from trade liberalization may further impact relative wages. Proponents of free trade argue that firms that face foreign competition are forced to adapt. These firms are forced to be more efficient through a better allocation of resources within existing plants. Alternatively, productivity enhancements can occur either through the exit of inefficient plants and entry of new more efficient plants. Given that inefficient firms tend to pay low wages, the exit of such plants is expected to raise average wages in that industry. Pavcnik et al. (2004) points out that while the theoretical literature offers disparate predictions about the impact of trade on productivity, the empirical work that has been done on this issue has generally yielded positive links between liberalization and productivity.

Harmse and Abuka (2005) explore the links between trade policy and total factor productivity in South Africa's manufacturing sector. Employing panel data at the industry level, static and dynamic equations are used to estimate the determinants of total factor productivity for manufacturing. They find that an important relationship between trade measures and manufacturing productivity exists in South Africa:

> *The benefits to productivity arise from pressures for a reduction in inefficiency and from lower costs associated with the exposure to more advanced technologies, intermediate inputs and machinery. Liberalisation of the external sector is good for competition and learning. Learning is available through increased access to world-class intermediate inputs and technology. (Harmse and Abuka (2005), p. 404)*

Looking at the impact of import competition in particular, the static panel estimates revealed a significant but negative association with the level of total factor productivity. This result appears to be counterintuitive as one would expect import penetration ratios to be positively linked to productivity if industries lower costs and become more efficient when import competition increases. It is suggested that the outcome may be because imports are endogenous with respect to domestic industries' productivity, i.e., some import-competing industries attract imports by being relatively less productive. In the dynamic estimation, however, they find a statistically significant association between import penetration and productivity. The interaction between import penetration and skill intensity was found to be positively and significantly associated with productivity performance, which points to the important role of trade in promoting the use of skilled labour.

To the degree that productivity improvements are passed through onto industry wages, one might expect wages to go up in the industries that experience the highest productivity gains. If these were the industries with the highest trade barrier reductions, then wages would be positively linked with liberalization. Also, to the extent that productivity enhancements occur through the exit of inefficient plants, average wages in that industry are expected to rise as inefficient firms tend to pay low wages.

To conclude, this discussion has drawn attention to the fact that various avenues exist through trade might affect wages. The expected outcome on wages is not definite. This paper therefore attempts to test empirically the relationship between trade and wages in the South African manufacturing sector.

3. Data

Data for the analysis comes from various sources. This study employs nationally representative household surveys conducted by Statistics South Africa (Stats SA). In particular, the 1996 and 1999 October Household Survey (OHS) and the 2001 and 2004 Labour Force Survey (LFS) are used. The OHS is an annual survey that ran from 1994 to 1999. In 2000, the OHS was replaced by the LFS. The LFS is conducted twice a year – the September survey is used in this paper since it is temporally more comparable to the OHS. Many of the key questions are asked the same way in each of the surveys, which facilitates comparisons. The surveys are based on a sample of 30 000 households, except for the 1996 OHS which was based on a sample of only 16 000 households.[5]

Earnings levels are most often reported as point values. However, in some cases respondents were allowed, and took, the option of responding in income brackets. These bracket responses were converted to point values using a similar approach to Posel and Casale's (2005) "actual average method". Actual earnings values are allocated to their respective brackets, but instead of using the mean of the point values as Posel and Casale do, the median is used, given that the distribution of income is unknown. In order to adjust wages for inflation, CPI deflators provided by StatsSA are used. The earnings data are all converted to weekly figures.

Protection is measured using scheduled tariff rates classified according to the SIC 3-digit level. The rates up until 1994 include the average surcharge rate, which was subsequently abolished in

[5] It would have been preferable to use the 1995 OHS instead, which is based on a sample of 30 000 households. However, this is not possible as the industry classifications are not comparable to the other years and to the tariff data. Also, as noted by Wittenberg (2004), there are concerns about how sound the 1996 OHS could have been, given the demands of the census in that same year.

1995. Details on the construction of the tariff database can be obtained from Edwards (2006). From the OHS and LFS, one can determine in which industry the individual works – tariff levels and changes are then matched with individuals at a sector level.

The analysis of the link between tariffs and wage levels uses only employed individuals who work in the manufacturing sector. The self employed are excluded from the study as several key variables are unavailable for this group. Moreover, workers with non-positive wages are omitted from the sample. This leaves a sample set of 2,344 employees in 2004, 2,636 in 2001, 2,329 in 1999 and 1,709 in 1996.

Figure 1 presents the simple unweighted average tariff rate for the manufacturing sector from 1990 to 2004. The graph reveals that tariffs dropped considerably between 1993 and 1998, after which tariffs continued to fall, but at a slower rate. The average tariff rate fell from 22.5% in 1993 to 10.7% in 1998 and then to 8.5% in 2004.

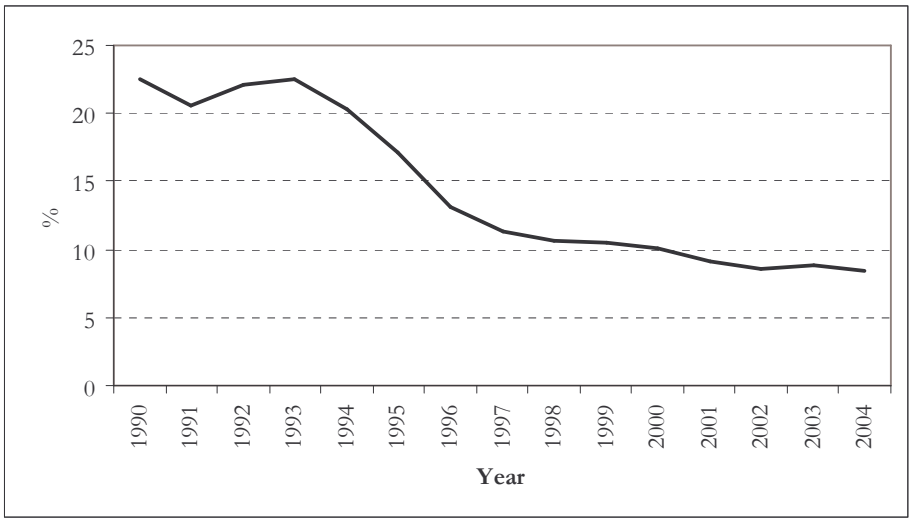

Figure 1: Average tariff rate for manufacturing

Appendix 1 contains a detailed list of tariffs for the manufacturing sector for 1993, 1996, 2001 and 2004. The table also presents the change in tariffs between 1993 and 2004. As noted by Edwards (2006), both the level and the change in protection vary across industries. Although South Africa has witnessed a significant liberalisation in trade, it has not been uniform across sectors. Small declines in protection were found in wood products, paper products and basic iron and steel sectors, while larger declines in protection were experienced in tobacco, wearing apparel, textiles, footwear, beverages and communication equipment. Despite the sizeable declines, tariffs in most of these sectors remain high.

Figure 2 presents the tariff rates for five of the industries found to be the most common employers in the manufacturing sample for all four years. These industries are the *Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats* (301); *Manufacture of other food products* (304); *Manufacture of wearing apparel, except fur apparel* (314), *Manufacture of non-metallic products n.e.c.* (342); and the *Manufacture of basic iron and steel* (351).

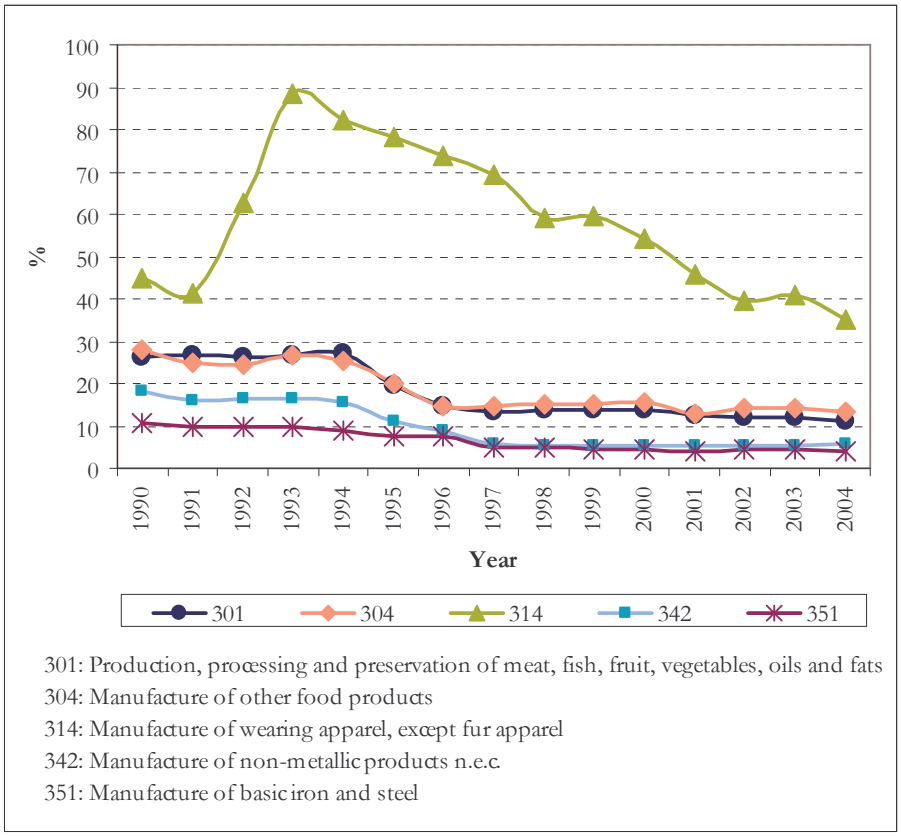

Figure 2: Tariff rates for selected industries

From the graph it is evident that even though there has been a large decrease in protection in the wearing apparel sector, this sector remains highly protected, with rates exceeding 35 per cent, which is well above the unweighted tariff average for 2004 of 8.5 per cent. For the remaining four sectors, rates were lowered between 1994 and 1998 and then remained largely unchanged thereafter. What is also evident is that the two food-related sectors had rates above average both in 1990 and 2004, while the *non-metallic products* and the *basic iron and steel* sectors had rates below average in 1990 and 2004. Most of the industries display similar patterns – those sectors that initially faced relatively high tariffs remain relatively more protected after liberalisation and *vice versa*.

Having briefly discussed the reduction in tariffs, we now consider the association between wages and tariffs. Figure 3 plots the mean weekly real earnings for all four years. For each year, the sample of individuals obtained either from the OHS or the LFS has been divided into two groups – those who worked in industries where there were low tariffs and those who work in industries that were highly protected. Low tariff sectors are defined as those industries where tariff rates are below the average tariff level for that particular year, while high tariff industries have tariff levels above average. A clear pattern emerges across all four years. The average weekly income of workers employed in industries that face low tariff levels is higher than the mean earnings of employees working in the industries that enjoy higher levels of protection.

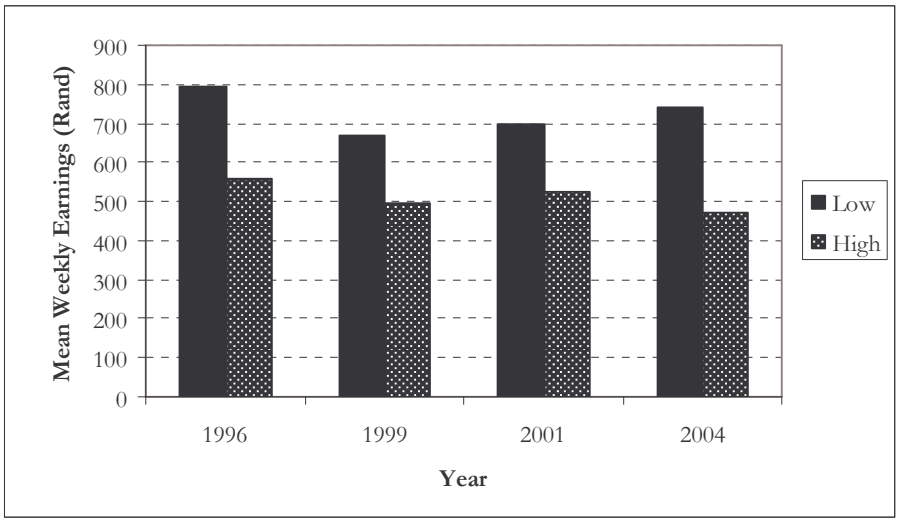

Figure 3: Real mean weekly earnings (2000 Rand) across tariff levels
Source: Estimations from 1996 and 1999 OHSs and 2001 and 2004 LFSs

Besides the level of tariffs, the extent to which tariffs have changed may also influence wages. Instead of splitting the sample of individuals according to tariff rates, Figure 4 uses the change in tariffs to classify the sectors. For each of the four years, the change in tariffs is calculated as the difference in tariffs between 1993 and the respective year. For each year, the average reduction in tariffs is taken as the benchmark from which to classify an industry as either experiencing large declines in tariffs or small declines in tariffs. Once again, for all four years, a clear pattern is evident – the mean weekly earnings of those workers employed in sectors that have experienced a large decline in tariffs is lower than the mean weekly earnings of those who are alternatively employed in sectors that did not drop tariffs substantially. However, it is likely that industries with higher initial levels of tariffs will have experienced higher absolute reductions in tariffs and that the results in Figure 4 may reflect this. In order to control for this, both the level and change in tariffs will be included in the econometric estimations.

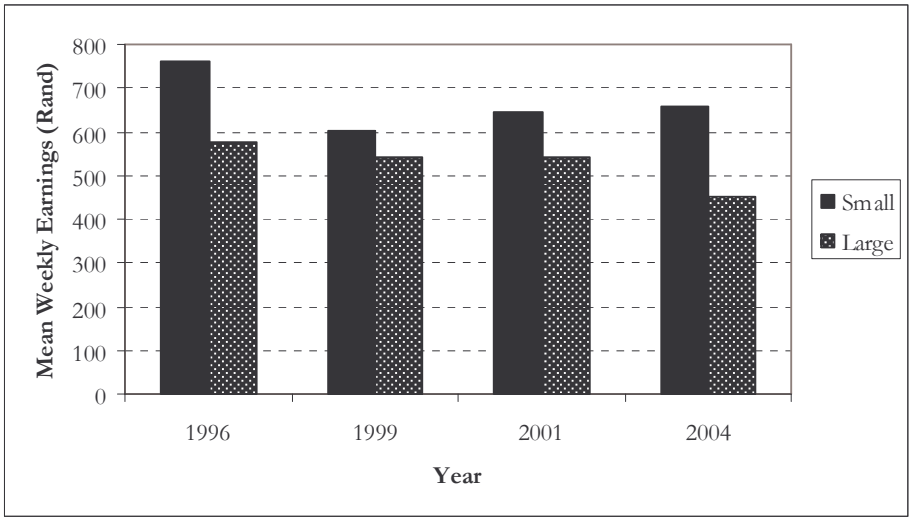

Figure 4: Real mean weekly earnings (2000 Rand) across tariff changes
Source: Estimations from 1996 and 1999 OHSs and 2001 and 2004 LFSs

4. Methodology

In order to investigate the link between tariffs and wages a standard Mincerian (1974) earnings framework is used. Using ordinary least squares, semi-logarithmic wage functions are estimated separately for 1996, 1999, 2001 and 2004. The log of wages is explained by a combination of worker and industry variables, as follows:

$$\ln W_i = X_i^{'}\beta_1 + I_i^{'}\beta_2 + u_i, \qquad (1)$$

where the *i* subscript denotes the individual, W_i is the hourly wage, $X_i^{'}$ is a vector of worker characteristics, $I_i^{'}$ is a vector of industry controls, β_1 and β_2 are the parameters to be estimated and u_i is the i.i.d. error term.

Demographic variables which are expected to determine the market wage in South Africa are included in the vector of worker characteristics. These include race and gender dummy variables as well as dummy variables for education. Age and a squared term for age are included in the regression specification to allow for non-linearities in earnings.

Variables linked to job characteristics are also included. A dummy for union membership is included as one would expect that unionised workers earn higher wages than non-unionised workers. To account for tenure, a continuous variable measuring years of tenure with the current employer is used. A squared term for tenure is also included to allow for the possibility that its influence on wages is non-linear. The earnings functions include dummies for occupational

categories, since wages are expected to vary substantially among occupations. These occupational categories are also closely related to the skills of individuals.

Controls for geographical location are included. A rural dummy variable is used to test whether workers in urban areas earn more than in rural areas.[6] Dummies for South Africa's nine provinces are also included. These spatial dummy variables control for regional differences in the cost of living and in labour markets, which might affect wages. They also potentially control for measurement issues surrounding education as a proxy for human capital if there are differences in the quality of schooling across regions (Jolliffe and Campos, 2004).

In addition to these demographic controls, a vector of industry variables is included to control for potential differences across industries in the manufacturing sector. The choice of appropriate industry measures is made difficult since there is little empirical work to use as a guide. The baseline regression includes a set of industry dummies, which are excluded from the other regressions once tariffs and the other industry controls are included since industry level dummies are perfectly correlated with tariff levels. Industry characteristics assumed to be important and which are therefore included in the regressions are the export to output ratio and the capital to output ratio.[7] For all four years the initial 1996 industry values are used to avoid collinearity with tariffs.

In a further attempt to control for industry characteristics, industry concentration ratios are included in all the regressions. [8] The concentration ratio employed is the C4, which indicates the amount of sales of the four largest firms in each sector as a proportion of all sales in that sector. For robustness, the C10, which includes the amount of sales and work done by the *ten* largest firms in each sector, is also used. Once again, the initial 1996 concentration ratios are used for all the years to avoid the collinearity problem. Assuming that profits are higher in concentrated industries, there should be a positive association between wage levels and market concentration.

In order to determine the effect of trade on wages, tariff levels are included in the earnings function. Thus, we estimate:

$$\ln W_i = X_i^{'}\beta_1 + I_i^{'}\beta_2 + \beta_3 T + u_i, \qquad (2)$$

where T is the level of tariffs and β_3 is the parameter to be estimated. Depending on the sign and magnitude of the coefficient on tariffs, one can determine the extent to which tariffs impact on

[6] The rural dummy is omitted from the 2004 regressions as the LFS 2004 did not provide the data for this variable
[7] Sourced from South African Standardised Industry Database.
[8] Concentration indices are sourced from StatsSA.

wages. This approach takes into account the static effect of trade protection on wages. In order to determine the effect of *changes* in protection on wages, changes in tariffs over different periods are included in several of the earnings equations instead of the level of tariffs. The following equation is therefore also estimated, where ΔT represents the change in tariffs:

$$\ln W_i = X_i'\beta_1 + I_i'\beta_2 + \beta_4 \Delta T + u_i \quad (3)$$

Finally, given that both the level of protection and the change in protection are most likely to be important, earnings equations that include both these variables are estimated as follows:

$$\ln W_i = X_i'\beta_1 + I_i'\beta_2 + \beta_3 T + \beta_4 \Delta T + u_i \quad (4)$$

Since people are self-selected into the category of wage earning employees, the use of ordinary least squares may yield biased results. A violation of classical assumptions occurs if one or more of the regressors are correlated with the regression residual. A potential cause of correlation is if individuals select in and out of the sample based on some characteristic that is correlated with a regressor (Jolliffe and Campos, 2004). The specifications discussed above do not take the problem of self-selection into account, which can lead to an overestimation of the effect of tariff levels and changes.

Sample-selection bias is normally overcome by using Heckman's two-step selection correction method (Heckman, 1979), which explicitly estimates a participation equation as the first step in estimating wage equations. Lee (1983) and Dubin and McFadden (1984) extend Heckman's two-step correction procedure to the case where selectivity is modelled as a multinomial logit. Bourguignon, Fournier and Gurgand (2004) survey the set of methods available in the literature for selectivity bias correction, where selection is specified as a multinomial logit. They observe that the models differ in the assumptions imposed either on the covariance structure or on the linearity of the model error terms. Lee's approach is simple and requires the estimation of only one parameter in the correction term, but the simplicity comes at the cost of restrictive assumptions on covariances (Bourguignon *et al.*, p. 5). Unlike Lee, Dubin and McFadden do not make the same restrictive assumptions. Bourguignon *et al* found that the Dubin-McFadden method generally outperformed the other methods in Monte-Carlo experiments. The Dubin-McFadden estimator is, however, sensitive to a normalization of the error terms and for this reason Bourguignon *et al.* propose a general alternative that relaxes the normalization constraint that Dubin and McFadden impose.

To correct for selectivity bias, this paper uses both Lee's method and the general alternative of the Dubin-McFadden procedure proposed by Bourguignon *et al* (2004). In order to use these procedures, we must observe at least one variable that influences the decision to work in the wage sector, but does not theoretically explain the wage level. The OHS and LFS data sets provide us with additional variables that can be used in the participation equation and also contain observations for those individuals that are not in the wage market. The selection variables used are an individual's marital status and also whether or not the individual is head of the household (i.e. household status).

The wage regressions described above are for those workers who remain employed in the manufacturing sector, but trade liberalisation is expected to impact not only wages, but also the chances of remaining employed. The panel component of the LFS is used to investigate whether tariff levels are associated with the probability of remaining employed. The panel component comprises 6 waves which stretch from September 2001 to March 2004.

Initially a probit model is estimated to investigate the relationship between tariff and employment – the dependent variable is a dichotomous variable where each economically active individual is either employed (0) in the manufacturing sector or unemployed (1). Only those who are unemployed, but were previously employed in manufacturing over the period covered by the panel, are included. Lags of between 1 (6 months) and 5 (2 and a half years) waves are considered. The expanded definition of unemployment is used, which includes a larger number of unemployed than the official definition. The use of the broader unemployment definition over the official definition is justified in Kingdon and Knight (2000).

The probit model only distinguishes between those that are currently employed and those that were employed in manufacturing but are now unemployed. Within the group of the employed will be individuals that have become unemployed, perhaps because of trade liberalisation, but have found a new job. In order to investigate this distinction further a multinomial logit model is used. Individuals are placed in three groups – (1) the currently employed that have had the job for a period of more than 6 months, (2) the currently employed that have had the job for less than 6 months, and (3) the currently unemployed.

The explanatory variables that are assumed to impact the employment status include age and age squared and dummy variables for race, gender, education, province, marital status and household status (head of the household). Concentration indices, export to output ratio, the capital to output ratio, tariffs and the change in tariffs are also included. For the employed, these variables relate to the industry in which the individual is employed, whereas for the unemployed, these

variables relate to the industry in which the individual was previously employed before being unemployed.

5. Results

Wage Regressions

Several regressions are estimated separately for each of the four years. We begin by including controls for personal characteristics, such as gender, race, age and education; job characteristics, such as union membership, tenure and occupation; and differences across regions. In addition, this basic regression contains a set of industry dummy variables to control for potential differences across industries in the manufacturing sector. We then drop the industry dummies, but add the level of tariffs and other industry controls (the export and capital ratios). Industry dummies are correlated with the other industry variables and therefore cannot be included when the other industry variables are included. We then estimate an equation that does not include the *level* of tariffs, but includes the *change* in tariffs only and then estimate an equation that includes both tariff *levels* and *changes*. For completeness, tariff changes over difference time periods are included in separate regressions for all the four years. For the 2004 sample, the impact of tariff changes over a ten year period (i.e. from 1994 to 2004), an eight year period (i.e. from 1996 to 2004), a six year period (i.e. from 1998 to 2004) and a four-year period (i.e. from 2000 to 2004) are estimated. Since liberalisation started after 1994, tariff changes over the ten year period are estimated for the 2004 sample only. Tariff changes over an eight year period are estimated for both 2001 and 2004, while changes over the six year period are estimated for 1999, 2001 and 2004. Tariff changes over a four-year period are estimated for all four years.

Tables A1 through A4 in Appendix 2 report the results of the estimated earnings functions, together with the heteroscedasticity-consistent standard errors. Given that the earnings functions are in semilogarithmic form, the slope coefficients of the quantitative regressors give the semielasticity, that is, the percentage change in the dependent variable for a unit change in the independent variable.

The personal and job characteristics have the expected sign across the models for all the years. The race dummies display the expected hierarchy – all else equal, Coloured, Asians and especially Whites earn significantly more than Africans, the reference group. The exception is found in 1996, where Asians did not earn significantly more than Africans. Females earn less than males across all years. Furthermore, the age earnings profile is concave – earnings increase at a

decreasing rate. Tenure also displays positive and decreasing returns for all four years and is significant at the 1 per cent level.

As expected, earnings are positively related to the level of education. For all the years, the sizes on the education dummies display the expected order: all else equal, those with a degree earn substantially more than those without education (the reference group), followed by workers with a diploma, secondary education and then primary education. The primary school dummy enters in significantly for all the years except 1996. Looking at 2004 in particular, a worker with a degree earned, on average, 169 per cent more than a worker with no education, while those who had completed primary school only earned only 12 per cent more than the reference group.

Union membership has a positive influence on earnings. The coefficient on union membership is significant at the 1 percent level for all four years. Based on regression 1 for 2004, the coefficient indicates that union members earned 27 per cent more than non-unionised members. This result is consistent with other studies on the wage union premium in South Africa and is indicative of the strong bargaining power of unions in South Africa (Rospabe, 2001).

The coefficients for occupational skill categories also conform to *a priori* expectations. Using unskilled occupations as the reference, most other occupations enjoy higher incomes, this is especially so for the high-skilled end of workers. Salespeople do not earn significantly more than the reference group for all the years; however, the number of salespeople in the manufacturing sample is small. Artisans, classified as semi-skilled, earned less than unskilled individuals in 2004, which is surprising, although the coefficient is not statistically significant, even at the 10 per cent level. For all the other years, artisans earned more than unskilled labour, although the coefficient is only significant for 2001.

Geographical variation in earnings is evident. Rural location is associated with lower earnings for 1996, 1999 and 2001 (as noted already, the rural variable is unavailable for 2004). Also, several of the coefficients for individual provincial dummies are significant.

Besides the usual variables included in most Mincerian wage regressions, industry controls were also included here. By doing this, we are, at least to some extent, able to control for variation in wages due to industry characteristics. The concentration index (C4) is positive and significant across all four years. This affirms the hypothesis that individuals who work in more concentrated industries earn higher wages. Furthermore, the magnitudes of the coefficients are relatively large for all three years. For example, in 2004, regression 2, we find that for a unit increase in the concentration index, wages increase by nearly 22 per cent. In order to check these results, the

regressions were rerun using the C10 index instead of the C4 index. The results were similar in that the coefficient on C10 was significant, positive and large in magnitude for all three years.

The other industry controls employed in the regressions are the export to output ratio and the capital to output ratio. As already noted, we use 1996 values for all the years to avoid a collinearity problem[9]. The coefficient on the export ratio is positive and significant for 2004, 2001 and 1999. This suggests that those who work in industries that export a larger proportion of output earn higher wages. However, in 1996, the export ratio does not enter in significantly. The capital ratio, which was assumed to be an important determinant of wages, yields ambiguous results. The sign of the coefficient varies across the years and is not always significant.

The relationship between levels of tariffs and earnings is negative and significant and robust to including changes in tariff levels for all four years. This implies that individuals who work in industries that are more protected earn less than those who work in more liberalised industries, even after controlling for observable worker characteristics. Tariffs are significant at the one per cent level for 1999, 2001 and 2004. In 1996, tariffs are significant at the ten per cent level only. This is most likely due to the smaller sample size for 1996. The coefficient estimates from 2004 suggest an approximate one-to-one relationship between tariff levels and earnings. This suggests that a worker with identical observable characteristics in an industry with tariffs that are 10 per cent lower than a second industry will earn wages that are approximately 10 per cent higher than someone employed in the second industry.

When only changes in tariffs were included in the earnings equations we found that for 2004, 2001 and 1999, the changes enter into the regressions negatively, regardless of which time period the change was taken over. The changes are mostly significant at the one per cent level for 2001 and 2004 and are significant at the five per cent level for 1999. For 1996, the change over the four year period is insignificant. Including tariff changes without controlling for the tariff level is, however, considered inappropriate, as the negative coefficient on the change is proxying the effect impact of high tariffs on wages because those industries that face high tariffs also tend to be those that have lowered tariffs the most. The regressions that include changes alone are therefore misspecified and controlling for the tariff level is necessary. For this reason, we do not include the results for these regressions in the tables.

When the tariff level is included along with the change in tariffs, we do indeed obtain a different outcome. For 2004, the changes in tariffs are positive and significant. Thus, given that the absolute value of the changes was used, when controlling for the tariff level, those who worked

[9] This is also done because 1996 was the last year of the Manufacturing Census. There is thus doubt in the accurateness of subsequent data.

in sectors that liberalised substantially earned higher wages. Once again, this result does not depend on the time period over which the change was taken, as all the changes are significant at the one per cent level, except for the four-year period change, which is insignificant. This is not surprising because by 2000 most of the changes in tariffs had already taken place. In 2001 and 1999, the tariff changes are also positive, expect for the four-year change, which is negative, but insignificant. For the 1996 sample, we find that the change over the four year remains insignificant. The main point, to be noted, however, is that the estimated coefficient on the tariff level remains negative and significant and in some cases, the magnitude of the tariff coefficient becomes larger.

To sum, we find that those workers employed in industries that face relatively low tariffs earn higher wages. When we do not control for the level of tariffs, we find that individuals working in sectors that have experienced a substantial decline in tariffs earn lower wages. However, including the change in tariffs without the tariffs level is a misspecification of the model. The change reflects the negative effects of higher tariffs, as the sectors which face high tariffs are those that have reduced tariffs the most. Once we correct for this by controlling for tariff levels and we take the change in tariffs over a longer time horizon, from six years and longer, we find that those employed in sectors that liberalised the most in fact earn higher wages. These results suggest two things. First, workers with identical observable characteristics in industries with different levels of tariffs will earn different wages. Those in industries with lower tariff levels will earn higher wages. This is even after controlling for the education, occupation and other observable individual and firm characteristics. Second, workers with identical observable characteristics in industries with identical levels of tariffs will earn different wages if these industries have a different history of liberalisation. Workers in industries that have liberalised earn higher wages than those in industries that have not, even if tariff levels are similar.

There is the possibility that some unobservable individual characteristic is associated with tariffs. There is also the possibility that tariffs might be proxying for some industry or firm characteristic that we have not controlled for. Controlling for industry level variables, such as concentration indices and export and capital ratios, does not change the result. However, these may not be perfect controls. These estimations have not controlled for firm specific variables either. It is likely that firm size is an important determinant of wages. While the OHS does not contain information on firm size, the LFS does. Tables A5 and A6 in the appendix report the results for when we use firm size as controls in the regressions for 2004 and 2001. These regressions include the dummy variable called *medium* which represents a firm that has between 10 and 50 employees. The dummy called *large* is for a firm with over 50 employees. As already noted, *a priori* one would expect firm size to have a positive influence on wages (Thaler, 1989). Indeed, we find that in

both years, these dummy variables are positive and significant, implying that all else equal, workers employed in a firm with ten or more employees earn, on average, more than workers employed in a firm that has less than ten employees. Importantly, however, we note that the coefficients on tariff levels and changes are largely unaffected once we have controlled for size.

One important caveat to consider with regards to the estimations is that tariffs are not necessarily exogenously determined. Indeed, one may very well expect that tariffs are dependent on the industry. Firms experiencing low productivity pay low wages and also have an incentive to promote protection. As such, sectors with high levels of tariffs are likely to have lower average productivity (and hence lower average wages). A government is likely to reduce tariffs in those industries most able to compete first. Certainly, there is evidence from the US that industries with low wages and a high level of labour per unit of output tend to be highly protected and industries with lower tariff cuts were industries in which workers tended to be unskilled and low paid (Baldwin, 1985).

Thus, the observed differences in wages and their correlation with tariffs may reflect underlying differences in sector level productivity. The endogeneity of tariffs has not been controlled for in this paper. One could account for endogeneity by instrumenting with international levels of tariffs. This is, however, currently outside the scope if this paper.

Selectivity corrected wage regressions

The results presented in the subsection above may be biased due to selectivity of individuals into manufacturing jobs. To correct for this we estimate the Mincerian earnings equation using the Lee (1983) and the Dubin and McFadden (1984) procedure to correct for sample selection. The estimates are reported in Tables A7 to A10 and tables A11 through A14 respectively.

Turning to the estimations from the Lee procedure, we find that for 2004 and 2001, these estimates do not differ in substantive ways from those estimated without accounting for sample selection. The coefficient on _m1, which estimates the covariance between the residual in the regressions and the residuals from the multinomial logit model, is statistically significant for a number of the regressions in 2004 and only statistically significant at the ten per cent level for a few of the regressions in 2001. The variables of interest, the level of tariffs and the change in tariffs, are unaffected when controlling for selection, thus sample-selection bias does not appear to be an important source of wage distortion in 2004 and 2001.

For 1999 and 1996, the results indicate that selection is significant, as the coefficient on _m1 is significant at the one per cent level for almost all the regressions for both years. The impact of selection is more dramatic in 1996, as several key variables lose their significance once we control for selection. From Table A10, we note that the coefficients on female, Coloured, Asian, age, age squared and primary education are no longer significant. Once again, as was the case in 2001 and 2004, we find that the variables pertinent to this study, tariffs and the changes in tariffs, are unaffected in 1996 and 1999. Thus, even though selection appears to distort the results for these earlier years, it does not have an impact on tariffs and the change in tariffs. The conclusion drawn from the basic OLS regressions regarding the impact of tariffs on wages are therefore still valid.

Similar results are found using the Dubin and McFadden method. For 2004 and 2001, after controlling for selection, we find that the results do not change considerably. Once again, the coefficients on tariffs and the changes in tariffs remain unchanged. In contrast to Lee's method, the Dubin and McFadden method estimates five parameters in the correction term, labelled _m1 up to _m5, since there are five choices in the multinomial logit. We find that all of these are insignificant for 2004 and 2001, implying that selection does not significantly bias the results obtained from the wage regressions. As was the case using the Lee procedure, we find that using the DMF method, selection plays a more dominant role in 1996 and 1999. Several of the coefficients on _m1 through _m5 are significant for both these years. After controlling for selection, we find that certain variables such as Coloured, Asian, age, age squared and the primary education dummy are no longer significant. Tariffs and the change in tariffs are unaffected by the correction for selectivity, confirming the conclusions drawn earlier, that selectivity-bias does not have a substantive impact on the results obtained from the wage regressions.[10]

[10] To check these results, Heckman's (1979) two-step procedure was also used. The first step considered those employed in manufacturing only versus those employed in non-manufacturing industries. Results obtained from the Heckman method were found to be consistent with those obtained from the Lee and DMF procedure. Only in 1996 and 1999 was selection significant, but once again, the coefficients on tariffs and the changes in tariffs were not significantly different from the regular OLS regressions.

Probit Estimates

The higher average wages in those sectors that have liberalised may be because these sectors have shed low wage jobs either through existing firms retrenching lower skilled lower paid workers or through the exit of low productivity firms paying lower wages. In this section we exploit the panel dimension of the LFS to investigate whether this is the case by comparing individuals that are currently employed in manufacturing with those that are currently unemployed but were previously employed in manufacturing. To do this we initially run a probit regression where each economically active individual is either employed (0) in the manufacturing sector or unemployed (1).

Several regressions are estimated for lags of 1 (6 months) to 6 (2 and a half years) waves. We estimate a set of regression that includes tariff levels, followed by regressions that incorporate both the change and the level of tariffs. Finally, we control for the level of previous earnings. Tables A15 and A16 report the probit estimates for the probability of being unemployed in the manufacturing sector controlling for tariff levels and tariff levels and the change in tariffs over the last 4 years respectively. The coefficients show the marginal effect (dF/dx) of each variable.

Tariff levels mostly enter positively across the regressions. They are significant for lags of 1, 2 and 2 and a half years. However, the magnitudes of these effects are relatively small – a one percentage point increase in tariffs reduces the probability of employment by 0.01 percent. Including the change in tariffs over a 4 year period makes tariff levels insignificant but tariff changes also are insignificant.

In order to investigate the hypothesis of low-wage job shedding we include lagged natural logarithms of wages in the regression. Table A17 displays the results. These earnings levels are always negative and significant suggesting that it is the low-wage earners that are more likely to lose their jobs. Including earnings also makes the level of tariffs insignificant.

The probit models do not take into account those people that may have lost their job but subsequently found a new one. In order to investigate this a multinomial logit is estimated. This groups people into three - (1) the currently employed that have had the job for a period of more than 6 months, (2) the currently employed that have had the job for less than 6 months, and (3) the currently unemployed. As with the probit lags of between 1 and 5 waves are used, and tariff levels and earnings are included in the model. Tables A18 and A19 report these results.

Although for 4 of the 5 lags, tariff levels are significantly and negatively related to the probability of being unemployed when compared to the longer-term employed, when compared to those that have found a new job they are insignificant in 3 of the 4 cases. This suggests that although high tariffs are associated with the increased probability of losing a job, they are not significantly associated with remaining unemployed. Adding earnings levels to the regressions confirms these and the earlier results. It is the low wage earners that face a higher probability of becoming unemployed but this is not significantly associated with remaining unemployed.

These results suggest that low-wage job shedding may be part of the explanation for the higher level of wages for those industries that have undergone liberalisation.

Sector level wage analysis

The second explanation posited to explain the results observed from the regressions is that average wages in liberalising sectors have risen relative to sectors where tariffs have remained largely the same. In order to investigate this hypothesis, we employ sector level wage and employment data obtained from the StatsSA Survey of Total Employment and Earnings (STEE). This quarterly survey was conducted from March 1995 to September 2002. It was then replaced by the Survey of Employment and earnings, which was in turn replaced by the Quarterly Employment Statistics survey. Given that these surveys are not comparable across time, we limit this analysis to the STEE. This survey obtains information regarding the total number of full-time and part-time employees who received pay for the reference quarter as well as total gross salaries and wages paid during that period for non-agricultural business industries. From this survey we are able to obtain average earnings (which includes the basic salary as well as overtime and bonuses) and employment figures for the manufacturing sector at the 3-digit SIC level[11]. To adjust wages for inflation, we use the CPI index provided by StatsSA.

As a starting point to this exercise, the various manufacturing sectors are grouped according to the extent to which they have liberalised. Figure 5 below plots the change in tariffs from 1995 to 2002 (these dates are used so that the change in tariffs corresponds to the STEE dataset which runs from 1995 to 2002 only). It is evident that the change in protection varies considerably across industries. Also, there are no obvious distinctions to be made between the sectors as the reduction in tariffs from one sector to another are quite gradual. As such, we split the sectors in a very rudimentary manner. The delineations, as shown in Figure 5 are:

(i) *High liberalisation*: This group experienced the largest reduction in tariffs (between 40% and 15%)

[11] We are not able to use data obtained from the LFS and OHS for this exercise as the number of observations for each sector was too small to obtain confident estimates of employment and wages by sector.

(ii) *Intermediate liberalisation*: This group experienced an intermediate reduction in tariffs (between 15% and 5%)

(iii) *Low liberalisation:* This group experienced the smallest reduction in tariffs (less than 5%)

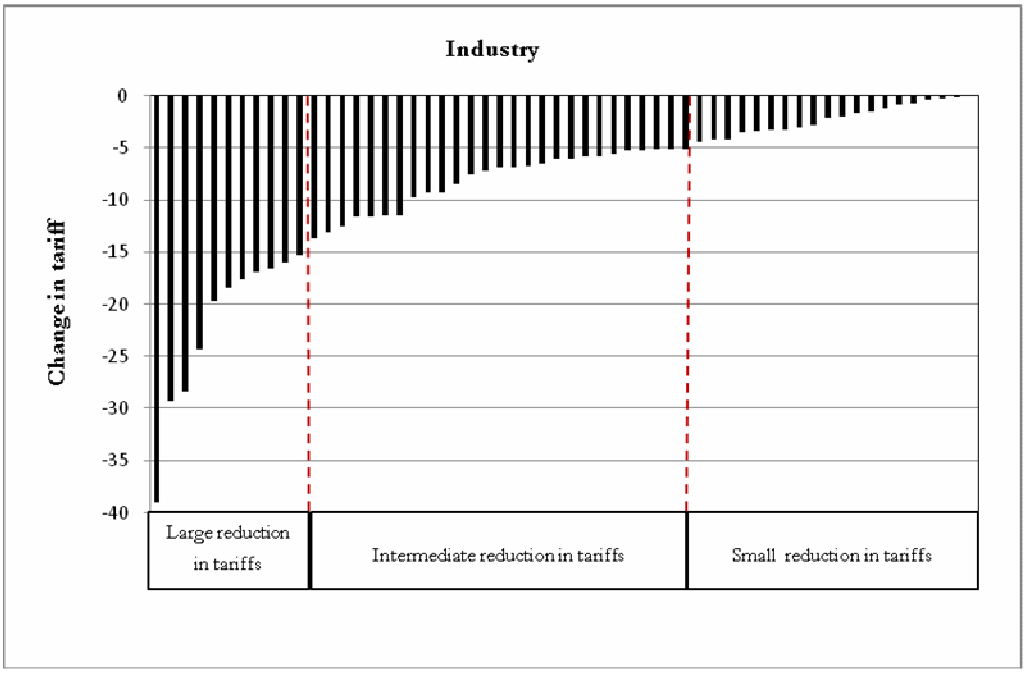

Figure 5: Change in tariffs for all the manufacturing sectors from 1995 to 2002

Table 1 below displays the percentage change in employment and wages from 1995 to 2002 for the three groups distinguished. We find that average wages in the liberalising sectors have increased relative to sectors that have not liberalised by much. This observation is consistent with the results of the regressions. At the very least, while the results from this simple exercise are not conclusive, they do not suggest otherwise. Furthermore, for all three groups identified, we find that employment has decreased, while average real wages have increased. This suggests that there has been low wage job shedding across the different groupings. Alternatively, it may be that low productivity firms (and hence low wage firms) have exited the market. To the extent that the increase in earnings and the reduction in employment is greater in the liberalising sectors, this suggests that the shedding of low wage jobs and perhaps the closure of low productivity firms in response to liberalisation might be an explanation for the increase in average wages.

	Employment	**Earnings**
High liberalisation	-14%	+24%
Intermediate liberalisation	-11%	+26%
Low liberalisation	-12%	+14%

Table 1: Percentage change in employment and wages from 1995 to 2002

6. Conclusion

This paper has investigated the relationship between tariffs and wages in the South African manufacturing sector by matching labour force data with industry level tariffs and changes in tariffs. Two robust results emerge. First, workers with identical observable characteristics in industries with different levels of tariffs earn different wages. Those in industries with lower tariff levels earn higher wages. This result remains even after controlling for the education, occupation and other observable individual and firm characteristics. Second, workers with identical observable characteristics in industries with identical levels of tariffs earn different wages if these industries have a different history of liberalisation. Workers in industries that have liberalised earn higher wages than those in industries that have not, even if tariff levels are similar. Both these results remain after controlling for selectivity. Taken together these suggest that tariff liberalisation is positively related to wages.

There are two possible explanations for why this may be so. The first is that industries that liberalise may shed low wage workers, or that low productivity firms exit, increasing the average wage. We investigate this explanation by examining whether the level and changes of tariffs are associated with being employed or recently employed in manufacturing. We find that higher tariff levels are associated with a higher probability of being unemployed versus employed However, we find no robust relationship between changes in tariffs and recently leaving a manufacturing job. We also find that low levels of wages are associated with a higher probability of unemployment. We also investigate whether tariff levels are associated with both becoming and remaining unemployed. We find that high tariff levels are associated with both unemployment and also with finding a new job. Thus high tariffs may influence becoming unemployed but they do not seem to influence the probability of remaining unemployed. These results suggest that the low wage job shedding hypothesis may explain some of the differences in wages identified above.

The second explanation is that average wages in low tariff and/or liberalising sectors have increased. Sector level wage data is employed to test this hypothesis. Albeit a crude analysis, we find some support for the hypothesis that average wages in liberalising sectors have increased relative to non-liberalising sectors. A final possible explanation is that tariffs proxy for some industry level, firm-level or individual characteristics that are associated with earnings. We have, however, attempted to control for industry level characteristics as well as firm size (for 2001 and 2004 only). We find that after controlling for industry and firm level characteristics these results remain, which suggests that liberalisation is good for wages for those that remain employed.

References

Abdi, T. and L. Edwards (2002) "Trade, technology and wage inequality in South Africa", DPRU Working Paper 02/60, University of Cape Town, Rondebosch.

Baldwin, R. (1985) *The Political Economy of US Import Policy*, Cambridge: MIT Press.

Behar, A. and L. Edwards (2005) "Trade liberalization and labour demand within South African Manufacturing firms", mimeograph, University of Cape Town, Rondebosch.

Bourguignon F., M. Fournier and M. Gurgand (2004) "Selection Bias Corrections based on the Multinomial Logit Model: Monte-Carlo Comparisons", mimeograph, Delta.

Cassim, R. and D. van Seventer (2006) "Reform of South Africa's Merchandise Trade since Democracy, an Overview", mimeograph, University of the Witwatersrand, Johannesburg.

Dickens, W. and L. Katz (1987) "Interindustry wage differences and industry characteristics" NBER Working Paper 2014

Dubin J. and D. McFadden (1984) "An Econometric Analysis of Residential Electric Appliance Holdings and Consumption", *Econometrica*, Vol. 52, pp 345-362.

Dunne, P. and Edwards, L. (2006) "Trade, Technology and Employment: A Case Study of South Africa" Paper prepared for the Centre for the Study of African Economics, University of Oxford, Conference on "Reducing Poverty and Inequality: How can Africa be Included?" 19th – 21st March, 2006.

Edwards, L. (2001): "Globalisation and the occupational structure of employment in South Africa", *South African Journal of Economics*, Vol. 69:1, pp.40-71.

Edwards, L. (2005) "Trade Liberalisation and Labour Demand in South Africa during the 1990s" Strategies and Analysis for Growth and Access (SAGA) Working paper, October 2005.

Edwards, L. (2006) "Has South Africa Liberalised its Trade", mimeograph, University of Cape Town, Rondebosch.

Edwards, L and T. van de Winkel (2005) "The Market Disciplining Effects of Trade Liberalisation and Regional Import Penetration on Manufacturing in South Africa", Trade and Industrial Policy Strategies (TIPS) Working Paper 1-2005

Fedderke J, Shin Y, Vaze P. (2003a) "Trade and labour usage: An examination of the South African manufacturing industry" Econometric Research Southern Africa Working Paper no. 15. University of Witwatersrand, Johannesburg.

Fedderke, J., C. Kularatne and M. Mariotti (2003b) "Mark-up Pricing in SA Industry" *Journal of African Economies* Vol. 16 No. 1, pp. 28 – 69

Gawande, K. and P. Krishna (2003) "The Political Economy of Trade Policy: Empirical Approaches" in Harrigan, J. and E. Kwan Choi (eds.) *Handbook of International Trade,* Basil Blackwell, pp. 213-250

Grossman, G. (1984) "International competition and the unionized sector" *Canadian Journal of Economics* 17:3, pp. 541-556

Grossman, G. and E. Helpman (1994) "Protection for Sale" *American Economic Review* 84, pp. 833-850

Harmse, C. And C. Abuka (2005) "The links between trade policy and total factor productivity in South Africa's Manufacturing Sector" *South African Journal of Economics*, Vol. 73:3. pp. 389-390

Harrison, A. (1994) "Productivity, imperfect competition and trade reform" *Journal of International Economics* 36, pp. 53-73

Heckman, J. (1979) 'Sample selection bias as a specification error', *Econometrica*, Vol. 47, pp. 153 – 161.

Jolliffe, D. and N. Campos (2005) "Does market liberalisation reduce gender discrimination? Econometric evidence from Hungary, 1986–1998", *Labour Economics* 12, pp.1-22.

Kee, H. and B. Hoekman (2003) "Imports, Entry and Competition Law as Market Discipline", *World Bank Working Paper* No. 3031

Keane, M. (1991) "Individual Heterogeneity and Interindustry Wage Differentials" *The Journal of Human Resources* XXVIII, pp. 134-161

Kingdon, G. and J. Knight (2000) "Are Searching and Non-searching Unemployment Distinct States When Unemployment is High: The Case of South Africa", WPS 2000-02, Centre for the Study of African Economies, University of Oxford.

Krueger, A. and L. Summers (1988) "Efficiency wages and the inter-industry wage structure", *Econometrica,* Vol. 56, No. 2, pp. 259-293.

Lee L.F. (1983) "Generalized Econometric Models with Selectivity", *Econometrica*, Vol. 51, pp. 507-512.

Levinsohn, J. (1993) "Testing the imports-as-a-market-discipline hypothesis" *Journal of International Economics* 35, pp. 1-22

Lewis, J. (2001) "Reform and opportunity: The changing role and patterns of trade in SA and SADC," Africa Region Working Paper Series, no. 14. World Bank.

Markusen, J., J.R. Melvin, K. Maskus, and W. Kaempfer (1995) *International Trade: Theory and Applications,* McGraw Hill, pp. 98-140

Markusen, J. & A. Venables (2005) "A Multi-Country Approach to Factor-Proportions Trade and Trade Costs," NBER Working Papers 11051

Mincer, J. (1974) "Schooling, Experience, and Earnings", New York: Columbia University Press for NBER.

Pavcnik, N., A. Blom, P. Goldberg and N. Schady (2004) "Trade Liberalisation and Industry Wage Structure: Evidence from Brazil" *The World Bank Economic Review*, 18: 3.

Polachek, S. and W. Siebert (1993) *The Economics of Earnings*, Cambridge: Cambridge University Press.

Posel D. & D. Casale (2005) "Who replies in brackets and what are the implications for earnings estimates? An analysis of earnings data from South Africa" Paper prepared for the Economic Society of South Africa (ESSA) Conference.

Quantech (2004) *South African Standardised Industry Database*, Quantec Research

Revenga, A. (1997) "Employment and Wage Effects of Trade Liberalisation: The Case of Mexican Manufacturing" *Journal of Labor Economics*, Vol. 15, No. 3, Part 2: Labour Market Flexibility in Developing Countries, pp. S20-S43

Rospabe, S. (2001) "Making racial relations fair in South Africa: a focus on the role of trade unions" DPRU Working Paper 01/48, University of Cape Town, Rondebosch.

Romer, D. (2001) *Advanced Macroeconomics* Second Edition, McGraw-Hill, pp. 456-461

Thaler, R. (1989) "Anomalies: Interindustry Wage Differentials" *The Journal of Economic Perspectives*, Vol. 3, No. 2, pp. 181-193

Wittenberg, M. (2004) "The Mystery of South Africa's Ghost Workers in 1996: Measurement and Mismeasurement in the Manufacturing Census, Population Census and October Household Surverys" *South African Journal of Economics* Vol. 72:5 December, pp. 1003 – 1022.

Appendix 1

MANUFACTURING	SIC 3	1993	1996	1999	2001	2004	Δ 1993-2004
Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats	301	26.5	14.8	13.7	12.5	11.1	-15.4
Manufacture of dairy products	302	15.0	23.9	25.8	18.7	21.1	6.1
Manufacture of grain mill products, starches and starch products and prepared animal feeds	303	9.7	5.9	6.6	6.9	6.1	-3.6
Manufacture of other food products	304	26.5	14.8	14.9	12.8	13.2	-13.3
Manufacture of beverages	305	36.0	15.0	13.9	15.3	12.3	-23.7
Manufacture of tobacco products	306	75.1	35.3	33.3	30.5	29.7	-45.4
Spinning, weaving and finishing of textiles	311	48.8	38.5	30.7	23.9	15.8	-33.0
Manufacture of other textiles	312	41.2	23.9	22.7	20.6	18.2	-23.0
Manufacture of knitted and crocheted fabrics and articles	313	62.2	42.5	34.4	27.1	19.7	-42.4
Manufacture of wearing apparel, except fur apparel	314	88.6	73.8	59.7	46.0	35.2	-53.4
Dressing and dyeing of fur; manufacture of articles of fur	315	34.7	18.3	18.3	17.0	18.7	-16.0
Tanning and dressing of leather; manufacture of luggage, handbag, saddlery and harness	316	25.5	15.2	13.1	12.9	11.4	-14.1
Manufacture of footwear	317	46.8	29.2	25.3	22.5	22.4	-24.4
Sawmilling and planning of wood	321	6.4	4.1	0.6	0.5	0.5	-5.9
Manufacture of products of wood, cork, straw and plaiting materials	322	20.3	13.6	11.4	10.9	11.1	-9.2
Manufacture of paper and paper products	323	12.4	7.7	7.1	6.5	6.6	-5.8
Publishing	324	17.1	7.3	3.1	2.9	2.8	-14.3
Printing and service activities related to printing	325	19.0	11.7	9.2	9.1	9.2	-9.8
Manufacture of coke oven products	331	10.0	10.0	10.0	9.2	9.0	-1.0
Petroleum refineries/synthesisers	332	15.0	10.8	4.9	3.9	3.5	-11.4
Processing of nuclear fuel	333	4.3	2.0	0.0	0.0	0.0	-4.3
Manufacture of basic chemicals	334	8.4	5.9	1.9	1.5	1.6	-6.8
Manufacture of other chemical products	335	17.7	10.4	4.9	4.0	4.2	-13.5
Manufacture of man-made fibres	336	8.5	8.2	7.8	7.5	6.9	-1.7
Manufacture of rubber products	337	21.1	15.0	12.5	11.8	10.6	-10.5
Manufacture of plastic products	338	22.6	16.2	12.0	9.7	9.6	-13.0
Manufacture of glass and glass products	341	19.1	12.0	9.7	8.8	9.0	-10.1
Manufacture of non-metallic mineral products n.e.c.	342	16.6	9.1	5.3	5.2	5.6	-11.0
Manufacture of basic iron and steel	351	9.7	7.5	4.3	4.2	3.9	-5.8
Manufacture of basic precious and non-ferrous metals	352	9.4	4.0	2.6	2.3	2.0	-7.4
Manufacture of structural metal products, tanks, reservoirs and steam generators	354	14.7	6.9	4.2	3.9	4.0	-10.6
Manufacture of other fabricated metal products; metalwork service activities	355	21.1	11.6	8.5	8.3	8.2	-12.8
Manufacture of general purpose machinery	356	13.7	7.9	4.4	3.8	3.6	-10.0
Manufacture of special purpose machinery	357	10.2	4.5	2.2	1.6	1.8	-8.4
Manufacture of household appliances n.e.c.	358	28.7	16.5	13.6	12.9	12.5	-16.1
Manufacture of office, accounting and computing machinery	359	6.5	0.0	0.0	0.0	0.0	-6.5
Manufacture of electric motors, generators and transformers	361	17.6	13.9	8.8	7.2	7.3	-10.3
Manufacture of electricity distribution and control apparatus	362	17.6	12.2	8.0	6.8	7.1	-10.5
Manufacture of insulated wire and cable	363	19.0	14.1	13.7	12.3	12.8	-6.2
Manufacture of accumulators, primary cells and primary batteries	364	32.2	10.9	8.3	6.4	7.4	-24.8
Manufacture of electric lamps and lighting equipment	365	28.3	17.0	11.6	11.1	10.7	-17.6
Manufacture of other electrical equipment n.e.c..	366	14.3	7.6	2.9	2.7	2.7	-11.6
Manufacture of electronic valves and tubes and other electronic components	371	6.8	2.7	2.4	2.2	2.2	-4.6

MANUFACTURING	SIC 3	1993	1996	1999	2001	2004	Δ 1993-2004
Manufacture of television and radio transmitters	372	11.7	4.3	5.9	4.7	4.6	-7.1
Manufacture of television and radio receivers	373	38.2	7.6	3.9	3.2	2.8	-35.4
Manufacture of medical appliances and instruments	374	9.4	2.3	0.4	0.4	0.4	-8.9
Manufacture of optical instruments and photographic equipment	375	15.4	2.0	0.5	0.4	0.5	-15.0
Manufacture of watches and clocks	376	24.5	6.8	0.0	0.0	0.0	-24.5
Manufacture of motor vehicles	381	44.6	27.6	21.2	17.4	15.5	-29.1
Manufacture of bodies for motor vehicles	382	20.0	18.5	18.4	15.9	15.6	-4.5
Manufacture of parts and accessories for motor vehicles and their engines	383	16.9	12.0	12.7	12.1	11.8	-5.1
Building and repairing of ships and boats	384	14.4	6.3	3.7	2.0	2.4	-12.0
Manufacture of railway and tramway locomotives and rolling stock	385	10.2	1.0	0.0	0.2	0.3	-9.9
Manufacture of aircraft and spacecraft	386	3.1	0.7	0.0	0.0	0.0	-3.1
Manufacture of transport n.e.c.	387	25.2	6.8	2.6	1.2	1.2	-24.0
Manufacture of furniture	391	32.5	21.1	17.6	17.3	17.4	-15.1
Manufacturing n.e.c.	392	32.5	12.1	8.7	8.1	8.0	-24.6
Recycling n.e.c.	395	2.6	3.1	1.9	1.4	1.2	-1.4
UNWEIGHTED AVERAGE		**22.5**	**13.2**	10.4	**9.1**	8.5	**-14.0**

Appendix 2

Table A1: OLS wage regressions – 2004

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry	**Tariff**	**Change (4yr)**	**Change(6yr)**	**Change (8yr)**	**Change(10yr)**
Female	-0.293***	-0.305***	-0.305***	-0.311***	-0.314***	-0.315***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Coloured	0.215***	0.259***	0.260***	0.263***	0.265***	0.258***
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
Asian	0.435***	0.448***	0.449***	0.454***	0.455***	0.447***
	(0.054)	(0.052)	(0.053)	(0.052)	(0.052)	(0.052)
White	0.697***	0.746***	0.746***	0.744***	0.746***	0.748***
	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)
Age	0.044***	0.044***	0.044***	0.044***	0.044***	0.044***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Age2	-0.048***	-0.049***	-0.049***	-0.049***	-0.049***	-0.049***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Primary	0.112**	0.148**	0.147**	0.147**	0.149**	0.149**
	(0.057)	(0.062)	(0.062)	(0.063)	(0.063)	(0.063)
Secondary	0.325***	0.398***	0.398***	0.397***	0.398***	0.396***
	(0.056)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
Diploma	0.775***	0.875***	0.875***	0.873***	0.874***	0.874***
	(0.081)	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)
Degree	0.992***	1.127***	1.128***	1.129***	1.131***	1.125***
	(0.149)	(0.147)	(0.147)	(0.147)	(0.147)	(0.146)
Union	0.237***	0.267***	0.267***	0.264***	0.262***	0.262***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Manager	0.814***	0.842***	0.841***	0.835***	0.831***	0.836***
	(0.077)	(0.080)	(0.080)	(0.080)	(0.080)	(0.079)
Professional	0.761***	0.834***	0.833***	0.824***	0.821***	0.838***
	(0.173)	(0.155)	(0.155)	(0.155)	(0.155)	(0.158)
Technician	0.414***	0.451***	0.450***	0.447***	0.446***	0.447***
	(0.064)	(0.066)	(0.066)	(0.066)	(0.066)	(0.065)
Clerk	0.376***	0.405***	0.405***	0.406***	0.407***	0.411***
	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
Salesperson	0.047	0.066	0.067	0.070	0.069	0.071
	(0.100)	(0.096)	(0.096)	(0.095)	(0.095)	(0.096)
Artisan	-0.018	-0.026	-0.025	-0.023	-0.024	-0.022
	(0.036)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Operator	0.148***	0.161***	0.161***	0.158***	0.157***	0.163***
	(0.031)	(0.032)	(0.032)	(0.032)	(0.031)	(0.031)
WCape	0.084	0.048	0.048	0.052	0.054	0.040
	(0.052)	(0.050)	(0.050)	(0.051)	(0.050)	(0.051)
ECape	-0.003	0.019	0.019	0.019	0.019	0.016
	(0.047)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
NCape	-0.237***	-0.261***	-0.261***	-0.259***	-0.260***	-0.270***
	(0.085)	(0.082)	(0.082)	(0.082)	(0.082)	(0.082)
FState	-0.285***	-0.278***	-0.278***	-0.277***	-0.277***	-0.281***
	(0.052)	(0.053)	(0.053)	(0.053)	(0.053)	(0.054)
NWest	-0.049	-0.075	-0.074	-0.068	-0.065	-0.065
	(0.053)	(0.052)	(0.053)	(0.052)	(0.052)	(0.052)
Gauteng	0.142***	0.166***	0.166***	0.166***	0.163***	0.159***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry	**Tariff**	**Change (4yr)**	**Change(6yr)**	**Change (8yr)**	**Change(10yr)**
Mpumalanga	-0.123**	-0.063	-0.063	-0.062	-0.062	-0.064
	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)
Limpopo	-0.262***	-0.294***	-0.293***	-0.287***	-0.286***	-0.291***
	(0.080)	(0.078)	(0.078)	(0.079)	(0.079)	(0.079)
Export		0.003***	0.003***	0.002**	0.002**	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Capital		0.056*	0.053	0.038	0.025	0.028
		(0.033)	(0.034)	(0.034)	(0.035)	(0.034)
C4		0.218***	0.219***	0.244***	0.279***	0.294***
		(0.076)	(0.076)	(0.077)	(0.079)	(0.078)
Tariff		-0.009***	-0.010***	-0.015***	-0.016***	-0.017***
		(0.002)	(0.003)	(0.004)	(0.003)	(0.003)
Change4			0.002			
			(0.005)			
Change6				0.008**		
				(0.004)		
Change8					0.006***	
					(0.002)	
Change10						0.006***
						(0.002)
Constant	4.159***	4.078***	4.086***	4.128***	4.120***	4.077***
	(0.160)	(0.157)	(0.158)	(0.158)	(0.157)	(0.157)
Observations	2344	2344	2344	2344	2344	2344
R-squared	0.62	0.59	0.59	0.59	0.59	0.59

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in Kwazulu/Natal
Rural variable not made available in the 2004 LFS

Table A2: OLS wage regressions – 2001

	(1)	(2)	(3)	(4)	(5)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Female	-0.267***	-0.269***	-0.268***	-0.274***	-0.275***
	(0.028)	(0.027)	(0.028)	(0.028)	(0.028)
Coloured	0.384***	0.392***	0.393***	0.394***	0.391***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Asian	0.289***	0.286***	0.285***	0.285***	0.283***
	(0.053)	(0.052)	(0.052)	(0.052)	(0.052)
White	0.773***	0.792***	0.792***	0.795***	0.789***
	(0.049)	(0.048)	(0.048)	(0.048)	(0.048)
Age	0.030***	0.030***	0.030***	0.030***	0.029***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Age2	-0.027***	-0.026***	-0.026***	-0.026***	-0.025***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Primary	0.112*	0.163***	0.163***	0.168***	0.169***
	(0.060)	(0.061)	(0.061)	(0.061)	(0.061)
Secondary	0.311***	0.385***	0.385***	0.390***	0.390***
	(0.059)	(0.060)	(0.060)	(0.060)	(0.060)
Diploma	0.801***	0.903***	0.903***	0.904***	0.905***
	(0.078)	(0.078)	(0.078)	(0.078)	(0.078)
Degree	1.184***	1.297***	1.296***	1.296***	1.297***
	(0.109)	(0.110)	(0.110)	(0.110)	(0.110)
Union	0.152***	0.167***	0.167***	0.167***	0.164***
	(0.026)	(0.025)	(0.025)	(0.025)	(0.025)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.214***	-0.260***	-0.260***	-0.262***	-0.258***
	(0.033)	(0.032)	(0.032)	(0.032)	(0.032)
Manager	0.787***	0.791***	0.791***	0.785***	0.788***
	(0.075)	(0.075)	(0.075)	(0.075)	(0.075)
Professional	0.499***	0.536***	0.537***	0.531***	0.533***
	(0.121)	(0.123)	(0.123)	(0.123)	(0.123)
Technician	0.442***	0.470***	0.471***	0.461***	0.464***
	(0.059)	(0.059)	(0.059)	(0.059)	(0.058)
Clerk	0.334***	0.354***	0.355***	0.349***	0.353***
	(0.047)	(0.046)	(0.046)	(0.046)	(0.046)
Salesperson	-0.027	0.017	0.018	0.009	0.009
	(0.092)	(0.089)	(0.088)	(0.089)	(0.089)
Artisan	0.139***	0.145***	0.146***	0.140***	0.139***
	(0.038)	(0.036)	(0.036)	(0.036)	(0.036)
Operator	0.162***	0.183***	0.183***	0.182***	0.180***
	(0.032)	(0.031)	(0.031)	(0.031)	(0.031)
WCape	-0.084*	-0.095*	-0.096*	-0.103**	-0.094*
	(0.050)	(0.049)	(0.049)	(0.050)	(0.049)
ECape	-0.232***	-0.227***	-0.228***	-0.222***	-0.227***
	(0.051)	(0.051)	(0.051)	(0.050)	(0.050)
NCape	-0.505***	-0.486***	-0.487***	-0.491***	-0.479***
	(0.086)	(0.084)	(0.084)	(0.084)	(0.083)
FState	-0.464***	-0.454***	-0.455***	-0.455***	-0.449***
	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
NWest	0.007	0.043	0.042	0.044	0.042
	(0.057)	(0.055)	(0.055)	(0.055)	(0.055)
Gauteng	0.045	0.033	0.033	0.030	0.033
	(0.037)	(0.036)	(0.036)	(0.036)	(0.036)

	(1)	(2)	(3)	(4)	(5)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Mpumalanga	-0.103*	-0.100*	-0.100*	-0.097*	-0.095*
	(0.054)	(0.052)	(0.052)	(0.052)	(0.052)
Limpopo	-0.434***	-0.480***	-0.481***	-0.473***	-0.472***
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Export		0.002*	0.002*	0.002*	0.002*
		(0.001)	(0.001)	(0.001)	(0.001)
Capital		0.027	0.030	0.012	0.018
		(0.036)	(0.036)	(0.036)	(0.036)
C4		0.217***	0.216***	0.202***	0.248***
		(0.073)	(0.073)	(0.073)	(0.076)
Tariff		-0.003***	-0.002	-0.009***	-0.007***
		(0.001)	(0.003)	(0.002)	(0.002)
Change4			-0.002		
			(0.005)		
Change6				0.008***	
				(0.003)	
Change8					0.005**
					(0.002)
Constant	4.558***	4.392***	4.381***	4.394***	4.368***
	(0.149)	(0.145)	(0.149)	(0.145)	(0.150)
Observations	2636	2636	2636	2636	2636
R-squared	0.61	0.59	0.59	0.59	0.59

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A3: OLS wage regressions – 1999

	(1)	(2)	(3)	(4)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**
Female	-0.262***	-0.271***	-0.271***	-0.271***
	(0.037)	(0.034)	(0.034)	(0.034)
Coloured	0.157***	0.173***	0.173***	0.173***
	(0.049)	(0.048)	(0.048)	(0.048)
Asian	0.281***	0.261***	0.262***	0.261***
	(0.074)	(0.074)	(0.074)	(0.074)
White	0.773***	0.781***	0.780***	0.781***
	(0.058)	(0.055)	(0.056)	(0.055)
Age	0.056***	0.058***	0.058***	0.058***
	(0.010)	(0.010)	(0.010)	(0.010)
Age2	-0.060***	-0.062***	-0.062***	-0.062***
	(0.012)	(0.012)	(0.012)	(0.012)
Primary	0.160**	0.167**	0.167**	0.166**
	(0.068)	(0.068)	(0.068)	(0.068)
Secondary	0.365***	0.386***	0.387***	0.386***
	(0.068)	(0.067)	(0.067)	(0.067)
Diploma	0.695***	0.718***	0.719***	0.718***
	(0.109)	(0.107)	(0.108)	(0.107)
Degree	1.041***	1.082***	1.083***	1.081***
	(0.157)	(0.155)	(0.155)	(0.155)
Union	0.108***	0.114***	0.113***	0.114***
	(0.030)	(0.030)	(0.030)	(0.031)
Tenure	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.197***	-0.210***	-0.209***	-0.210***
	(0.042)	(0.041)	(0.041)	(0.041)
Manager	0.560***	0.557***	0.557***	0.557***
	(0.093)	(0.090)	(0.090)	(0.090)
Professional	0.618***	0.647***	0.646***	0.647***
	(0.150)	(0.147)	(0.147)	(0.147)
Technician	0.309***	0.325***	0.325***	0.325***
	(0.071)	(0.071)	(0.071)	(0.071)
Clerk	0.286***	0.301***	0.301***	0.301***
	(0.057)	(0.056)	(0.056)	(0.056)
Salesperson	0.090	0.102	0.102	0.103
	(0.084)	(0.082)	(0.083)	(0.082)
Artisan	0.031	0.032	0.032	0.032
	(0.045)	(0.044)	(0.044)	(0.044)
Operator	0.108***	0.116***	0.115***	0.116***
	(0.039)	(0.039)	(0.039)	(0.039)
WCape	0.188***	0.140**	0.141**	0.140**
	(0.060)	(0.058)	(0.058)	(0.058)
ECape	-0.266***	-0.269***	-0.269***	-0.270***
	(0.073)	(0.070)	(0.070)	(0.070)
NCape	0.039	0.013	0.014	0.013
	(0.153)	(0.152)	(0.152)	(0.152)
FState	-0.499***	-0.507***	-0.506***	-0.506***
	(0.069)	(0.069)	(0.069)	(0.069)
NWest	0.049	0.058	0.058	0.058
	(0.058)	(0.059)	(0.059)	(0.059)
Gauteng	0.022	0.014	0.015	0.015
	(0.050)	(0.051)	(0.051)	(0.051)

	(1)	(2)	(3)	(4)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**
Mpumalanga	-0.048	-0.068	-0.068	-0.067
	(0.074)	(0.072)	(0.072)	(0.072)
Limpopo	-0.197**	-0.218**	-0.217**	-0.218**
	(0.087)	(0.087)	(0.087)	(0.087)
Export		0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)
Capital		-0.093*	-0.092*	-0.094**
		(0.048)	(0.048)	(0.048)
C4		0.211**	0.214**	0.216**
		(0.086)	(0.086)	(0.088)
Tariff		-0.003***	-0.003**	-0.003**
		(0.001)	(0.001)	(0.001)
Change4			-0.001	
			(0.003)	
Change6				0.001
				(0.003)
Constant	3.871***	3.956***	3.959***	3.950***
	(0.211)	(0.200)	(0.200)	(0.202)
Observations	2329	2329	2329	2329
R-squared	0.49	0.48	0.48	0.48

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A4: OLS wage regressions – 1996

	(1)	(2)	(3)
	Industry	**Tariff**	**Change (4yr)**
Female	-0.315***	-0.326***	-0.326***
	(0.040)	(0.038)	(0.038)
Coloured	0.194***	0.189***	0.190***
	(0.057)	(0.056)	(0.056)
Asian	0.126**	0.095	0.096
	(0.062)	(0.061)	(0.061)
White	0.803***	0.798***	0.798***
	(0.063)	(0.060)	(0.060)
Age	0.062***	0.062***	0.062***
	(0.010)	(0.010)	(0.010)
Age2	-0.070***	-0.070***	-0.070***
	(0.012)	(0.013)	(0.013)
Primary	0.029	0.023	0.023
	(0.080)	(0.081)	(0.082)
Secondary	0.352***	0.358***	0.359***
	(0.079)	(0.079)	(0.080)
Diploma	0.773***	0.804***	0.805***
	(0.104)	(0.105)	(0.105)
Degree	0.927***	0.921***	0.921***
	(0.145)	(0.146)	(0.146)
Union	0.120***	0.113***	0.114***
	(0.034)	(0.034)	(0.034)
Tenure	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)
Tenure2	-0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)
Rural	-0.141**	-0.164***	-0.164***
	(0.056)	(0.056)	(0.056)
Manager	0.550***	0.545***	0.546***
	(0.084)	(0.086)	(0.086)
Professional	0.679***	0.688***	0.692***
	(0.139)	(0.141)	(0.142)
Technician	0.400***	0.392***	0.393***
	(0.071)	(0.071)	(0.071)
Clerk	0.328***	0.317***	0.318***
	(0.058)	(0.057)	(0.057)
Salesperson	-0.059	-0.055	-0.052
	(0.092)	(0.093)	(0.093)
Artisan	0.061	0.045	0.047
	(0.053)	(0.051)	(0.051)
Operator	0.125***	0.134***	0.134***
	(0.046)	(0.046)	(0.046)
WCape	-0.060	-0.100	-0.101
	(0.076)	(0.073)	(0.073)
ECape	-0.094	-0.144**	-0.141**
	(0.069)	(0.066)	(0.066)
NCape	-0.481***	-0.528***	-0.525***
	(0.116)	(0.111)	(0.111)
FState	-0.312***	-0.361***	-0.366***
	(0.114)	(0.114)	(0.114)
NWest	-0.009	-0.066	-0.063
	(0.082)	(0.077)	(0.077)
Gauteng	0.022	0.003	0.004

	(1)	(2)	(3)
	Industry	**Tariff**	**Change (4yr)**
	(0.056)	(0.054)	(0.054)
Mpumalanga	-0.156**	-0.192***	-0.193***
	(0.072)	(0.071)	(0.071)
Limpopo	-0.248**	-0.271***	-0.274***
	(0.102)	(0.100)	(0.100)
Export		-0.000	-0.000
		(0.001)	(0.001)
Capital		0.002	-0.006
		(0.034)	(0.035)
C4		0.154*	0.163*
		(0.092)	(0.092)
Tariff		-0.002*	-0.002*
		(0.001)	(0.001)
Change4			-0.001
			(0.002)
Constant	4.127***	4.190***	4.204***
	(0.229)	(0.225)	(0.227)
Observations	1709	1709	1709
R-squared	0.50	0.48	0.48

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A5: OLS wage regressions (controlling for firm size) – 2004

	(1)	(2)	(3)	(4)	(5)
	Tariff	Change (4yr)	Change (6yr)	Change (8yr)	Change (10yr)
Female	-0.314***	-0.315***	-0.320***	-0.322***	-0.322***
	(0.029)	(0.030)	(0.030)	(0.030)	(0.029)
Coloured	0.239***	0.239***	0.242***	0.244***	0.238***
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)
Asian	0.459***	0.460***	0.465***	0.466***	0.457***
	(0.052)	(0.052)	(0.052)	(0.052)	(0.052)
White	0.748***	0.748***	0.747***	0.748***	0.750***
	(0.056)	(0.056)	(0.056)	(0.056)	(0.056)
Age	0.044***	0.044***	0.045***	0.045***	0.044***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Age2	-0.048***	-0.048***	-0.048***	-0.049***	-0.048***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Primary	0.139**	0.138**	0.138**	0.140**	0.140**
	(0.060)	(0.060)	(0.061)	(0.061)	(0.061)
Secondary	0.368***	0.368***	0.367***	0.368***	0.367***
	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)
Diploma	0.843***	0.843***	0.841***	0.842***	0.844***
	(0.084)	(0.084)	(0.084)	(0.084)	(0.084)
Degree	1.083***	1.084***	1.086***	1.087***	1.083***
	(0.148)	(0.148)	(0.148)	(0.148)	(0.147)
Union	0.227***	0.227***	0.224***	0.223***	0.224***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Manager	0.845***	0.844***	0.839***	0.835***	0.840***
	(0.079)	(0.079)	(0.079)	(0.079)	(0.078)
Professional	0.851***	0.850***	0.841***	0.839***	0.854***
	(0.159)	(0.159)	(0.159)	(0.159)	(0.160)
Technician	0.468***	0.467***	0.464***	0.464***	0.464***
	(0.065)	(0.065)	(0.065)	(0.065)	(0.065)
Clerk	0.414***	0.414***	0.415***	0.416***	0.418***
	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
Salesperson	0.101	0.102	0.105	0.104	0.105
	(0.096)	(0.095)	(0.095)	(0.095)	(0.096)
Artisan	0.029	0.029	0.031	0.031	0.030
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
Operator	0.162***	0.161***	0.158***	0.158***	0.163***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
WCape	0.103**	0.103**	0.107**	0.108**	0.095*
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
ECape	0.041	0.041	0.041	0.041	0.038
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)
NCape	-0.196**	-0.196**	-0.194**	-0.196**	-0.205**
	(0.079)	(0.079)	(0.080)	(0.080)	(0.080)
FState	-0.277***	-0.277***	-0.276***	-0.276***	-0.279***
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
NWest	-0.059	-0.059	-0.053	-0.050	-0.051
	(0.051)	(0.051)	(0.051)	(0.051)	(0.051)
Gauteng	0.183***	0.183***	0.183***	0.180***	0.177***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Mpumalanga	-0.065	-0.065	-0.064	-0.064	-0.066
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)

	(1)	(2)	(3)	(4)	(5)
	Tariff	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**	**Change (10yr)**
Limpopo	-0.251***	-0.250***	-0.244***	-0.243***	-0.250***
	(0.080)	(0.081)	(0.081)	(0.081)	(0.080)
Export	0.003***	0.003***	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Capital	0.045	0.043	0.029	0.016	0.023
	(0.032)	(0.033)	(0.033)	(0.034)	(0.033)
C4	0.180**	0.181**	0.204***	0.237***	0.244***
	(0.074)	(0.074)	(0.075)	(0.077)	(0.076)
Tariff	-0.010***	-0.011***	-0.016***	-0.016***	-0.016***
	(0.002)	(0.003)	(0.004)	(0.003)	(0.003)
Medium	0.188***	0.188***	0.187***	0.187***	0.184***
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Large	0.323***	0.323***	0.322***	0.321***	0.314***
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
Change4		0.002			
		(0.005)			
Change6			0.008*		
			(0.004)		
change8				0.006**	
				(0.002)	
Change10					0.005***
					(0.002)
Constant	3.887***	3.896***	3.935***	3.927***	3.891***
	(0.158)	(0.160)	(0.160)	(0.159)	(0.158)
Observations	2344	2344	2344	2344	2344
R-squared	0.60	0.60	0.60	0.60	0.60

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The base model is a non-union, unskilled African worker, with no education who resides in Kwazulu/Natal and works in a firm with less than ten employees.

Table A6: OLS wage regressions (controlling for firm size) – 2001

	(1)	(2)	(3)	(4)
	Tariff	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Female	-0.274***	-0.274***	-0.280***	-0.280***
	(0.027)	(0.028)	(0.028)	(0.028)
Coloured	0.387***	0.387***	0.389***	0.386***
	(0.046)	(0.046)	(0.046)	(0.046)
Asian	0.283***	0.283***	0.282***	0.281***
	(0.051)	(0.051)	(0.051)	(0.051)
White	0.788***	0.788***	0.791***	0.785***
	(0.048)	(0.048)	(0.048)	(0.048)
Age	0.030***	0.030***	0.030***	0.029***
	(0.007)	(0.007)	(0.007)	(0.007)
Age2	-0.026***	-0.026***	-0.026***	-0.025***
	(0.008)	(0.009)	(0.008)	(0.009)
Primary	0.159***	0.159***	0.164***	0.164***
	(0.061)	(0.061)	(0.060)	(0.061)
Secondary	0.381***	0.381***	0.387***	0.387***
	(0.059)	(0.059)	(0.059)	(0.059)
Diploma	0.880***	0.880***	0.881***	0.882***
	(0.077)	(0.077)	(0.077)	(0.077)
Degree	1.281***	1.281***	1.282***	1.282***
	(0.107)	(0.108)	(0.107)	(0.108)
Union	0.141***	0.140***	0.141***	0.139***
	(0.026)	(0.026)	(0.026)	(0.026)
Tenure	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.258***	-0.257***	-0.260***	-0.256***
	(0.032)	(0.032)	(0.032)	(0.032)
Manager	0.800***	0.801***	0.795***	0.797***
	(0.074)	(0.074)	(0.074)	(0.074)
Professional	0.530***	0.531***	0.525***	0.527***
	(0.120)	(0.120)	(0.120)	(0.120)
Technician	0.472***	0.474***	0.464***	0.467***
	(0.058)	(0.058)	(0.058)	(0.058)
Clerk	0.362***	0.363***	0.357***	0.360***
	(0.046)	(0.046)	(0.046)	(0.046)
Salesperson	0.051	0.051	0.042	0.042
	(0.089)	(0.089)	(0.089)	(0.089)
Artisan	0.169***	0.170***	0.164***	0.163***
	(0.037)	(0.037)	(0.037)	(0.037)
Operator	0.185***	0.186***	0.184***	0.182***
	(0.031)	(0.031)	(0.031)	(0.031)
WCape	-0.090*	-0.092*	-0.097**	-0.089*
	(0.049)	(0.049)	(0.049)	(0.049)
ECape	-0.224***	-0.225***	-0.219***	-0.224***
	(0.050)	(0.050)	(0.050)	(0.050)
NCape	-0.447***	-0.448***	-0.452***	-0.442***
	(0.085)	(0.085)	(0.085)	(0.084)
FState	-0.454***	-0.455***	-0.454***	-0.449***
	(0.057)	(0.057)	(0.057)	(0.057)
NWest	0.049	0.048	0.051	0.048
	(0.054)	(0.054)	(0.054)	(0.054)
Gauteng	0.039	0.039	0.037	0.040
	(0.036)	(0.036)	(0.036)	(0.036)

	(1)	(2)	(3)	(4)
	Tariff	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Mpumalanga	-0.102**	-0.102**	-0.099*	-0.098*
	(0.051)	(0.051)	(0.051)	(0.051)
Limpopo	-0.469***	-0.470***	-0.463***	-0.462***
	(0.069)	(0.069)	(0.069)	(0.070)
Export	0.002	0.002*	0.002*	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
Capital	0.029	0.032	0.015	0.021
	(0.035)	(0.036)	(0.035)	(0.036)
C4	0.209***	0.208***	0.195***	0.237***
	(0.072)	(0.072)	(0.072)	(0.075)
Tariff	-0.004***	-0.002	-0.009***	-0.007***
	(0.001)	(0.003)	(0.002)	(0.002)
Medium	0.080**	0.080**	0.083**	0.080**
	(0.036)	(0.036)	(0.036)	(0.036)
Large	0.158***	0.158***	0.158***	0.156***
	(0.036)	(0.036)	(0.035)	(0.035)
Change4		-0.003		
		(0.005)		
Change6			0.007**	
			(0.003)	
Change8				0.005**
				(0.002)
Constant	4.295***	4.284***	4.296***	4.275***
	(0.143)	(0.146)	(0.143)	(0.147)
Observations	2636	2636	2636	2636
R-squared	0.60	0.60	0.60	0.60

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal and works in a firm with less than ten employees.

Table A7: Selectivity corrected wage regressions (Lee) – 2004

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry	Tariff	Change (4yr)	Change (6yr)	Change (8yr)	Change (10yr)
Female	-0.229***	-0.249***	-0.250***	-0.256***	-0.259***	-0.261***
	(0.045)	(0.044)	(0.043)	(0.040)	(0.045)	(0.052)
Coloured	0.190***	0.237***	0.238***	0.241***	0.243***	0.237***
	(0.041)	(0.046)	(0.046)	(0.049)	(0.050)	(0.053)
Asian	0.373***	0.394***	0.395***	0.400***	0.401***	0.394***
	(0.064)	(0.067)	(0.055)	(0.055)	(0.064)	(0.066)
White	0.681***	0.733***	0.732***	0.731***	0.733***	0.735***
	(0.056)	(0.055)	(0.042)	(0.067)	(0.057)	(0.052)
Age	0.022	0.025*	0.025**	0.025**	0.025**	0.025
	(0.015)	(0.014)	(0.012)	(0.011)	(0.013)	(0.016)
Age2	-0.021	-0.025	-0.025	-0.025*	-0.026	-0.026
	(0.019)	(0.017)	(0.015)	(0.014)	(0.016)	(0.020)
Primary	0.062	0.105	0.104*	0.104	0.106**	0.107
	(0.063)	(0.065)	(0.063)	(0.075)	(0.053)	(0.067)
Secondary	0.236***	0.320***	0.320***	0.319***	0.321***	0.320***
	(0.079)	(0.077)	(0.078)	(0.094)	(0.060)	(0.075)
Diploma	0.713***	0.821***	0.821***	0.819***	0.821***	0.822***
	(0.096)	(0.105)	(0.080)	(0.108)	(0.085)	(0.108)
Degree	0.983***	1.119***	1.120***	1.122***	1.123***	1.117***
	(0.168)	(0.142)	(0.141)	(0.165)	(0.124)	(0.140)
Union	0.235***	0.266***	0.266***	0.262***	0.261***	0.260***
	(0.027)	(0.026)	(0.029)	(0.027)	(0.031)	(0.028)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Manager	0.815***	0.843***	0.842***	0.837***	0.833***	0.837***
	(0.081)	(0.082)	(0.073)	(0.078)	(0.082)	(0.081)
Professional	0.758***	0.833***	0.832***	0.823***	0.820***	0.837***
	(0.186)	(0.169)	(0.139)	(0.175)	(0.149)	(0.169)
Technician	0.411***	0.448***	0.448***	0.445***	0.444***	0.445***
	(0.053)	(0.061)	(0.062)	(0.070)	(0.082)	(0.051)
Clerk	0.372***	0.403***	0.403***	0.403***	0.405***	0.409***
	(0.063)	(0.050)	(0.053)	(0.069)	(0.058)	(0.055)
Salesperson	0.044	0.063	0.064	0.067	0.066	0.068
	(0.088)	(0.085)	(0.124)	(0.097)	(0.098)	(0.106)
Artisan	-0.018	-0.026	-0.026	-0.023	-0.024	-0.023
	(0.039)	(0.034)	(0.042)	(0.035)	(0.034)	(0.033)
Operator	0.145***	0.159***	0.158***	0.155***	0.154***	0.160***
	(0.028)	(0.032)	(0.032)	(0.032)	(0.030)	(0.027)
WCape	0.086*	0.051	0.051	0.055	0.056	0.043
	(0.047)	(0.060)	(0.058)	(0.047)	(0.049)	(0.043)
ECape	0.016	0.035	0.035	0.035	0.036	0.032
	(0.050)	(0.051)	(0.057)	(0.051)	(0.049)	(0.048)
NCape	-0.152	-0.186**	-0.186**	-0.184**	-0.186**	-0.197**
	(0.098)	(0.087)	(0.091)	(0.077)	(0.085)	(0.093)
FState	-0.251***	-0.249***	-0.249***	-0.248***	-0.248***	-0.252***
	(0.051)	(0.064)	(0.064)	(0.053)	(0.057)	(0.070)
NWest	-0.009	-0.040	-0.039	-0.033	-0.031	-0.031
	(0.056)	(0.055)	(0.052)	(0.059)	(0.059)	(0.054)
Gauteng	0.138***	0.163***	0.163***	0.162***	0.159***	0.156***
	(0.037)	(0.045)	(0.047)	(0.043)	(0.040)	(0.037)
Mpumalanga	-0.135***	-0.072	-0.072	-0.072	-0.072	-0.073*
	(0.052)	(0.054)	(0.050)	(0.049)	(0.054)	(0.043)

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**	**Change (10yr)**
Limpopo	-0.168	-0.213**	-0.211**	-0.205**	-0.205**	-0.212*
	(0.109)	(0.101)	(0.106)	(0.091)	(0.101)	(0.110)
Export		0.003***	0.003***	0.002**	0.002*	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Capital		0.056*	0.054*	0.039	0.025	0.029
		(0.029)	(0.032)	(0.030)	(0.039)	(0.035)
C4		0.218***	0.218***	0.243***	0.278***	0.294***
		(0.070)	(0.077)	(0.074)	(0.083)	(0.061)
Tariff		-0.009***	-0.010***	-0.015***	-0.016***	-0.016***
		(0.002)	(0.003)	(0.004)	(0.003)	(0.003)
Change4			0.002			
			(0.006)			
Change6				0.008*		
				(0.005)		
Change8					0.006**	
					(0.002)	
Change10						0.006***
						(0.002)
_m1	-0.191**	-0.166*	-0.167**	-0.167*	-0.165	-0.162
	(0.095)	(0.091)	(0.082)	(0.085)	(0.102)	(0.112)
Constant	5.022***	4.825***	4.838***	4.877***	4.860***	4.806***
	(0.505)	(0.459)	(0.411)	(0.415)	(0.445)	(0.530)

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The base model is a non-union, unskilled African worker, with no education who resides in Kwazulu/Natal

Table A8: Selectivity corrected wage regressions (Lee) – 2001

	(1)	(2)	(3)	(4)	(5)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Female	-0.201***	-0.220***	-0.218***	-0.225***	-0.224***
	(0.042)	(0.042)	(0.045)	(0.040)	(0.037)
Coloured	0.335***	0.355***	0.355***	0.357***	0.352***
	(0.062)	(0.054)	(0.059)	(0.052)	(0.044)
Asian	0.246***	0.253***	0.252***	0.252***	0.249***
	(0.057)	(0.062)	(0.058)	(0.066)	(0.051)
White	0.746***	0.772***	0.772***	0.775***	0.768***
	(0.051)	(0.044)	(0.047)	(0.051)	(0.051)
Age	0.008	0.013	0.012	0.012	0.011
	(0.019)	(0.016)	(0.014)	(0.014)	(0.012)
Age2	0.000	-0.006	-0.006	-0.006	-0.004
	(0.023)	(0.019)	(0.017)	(0.017)	(0.015)
Primary	0.062	0.126*	0.125*	0.130*	0.130**
	(0.063)	(0.066)	(0.067)	(0.067)	(0.065)
Secondary	0.227***	0.323***	0.321***	0.327***	0.325***
	(0.073)	(0.076)	(0.079)	(0.075)	(0.068)
Diploma	0.740***	0.858***	0.857***	0.858***	0.858***
	(0.079)	(0.083)	(0.079)	(0.085)	(0.070)
Degree	1.164***	1.283***	1.282***	1.282***	1.282***
	(0.106)	(0.116)	(0.095)	(0.110)	(0.085)
Union	0.150***	0.166***	0.165***	0.166***	0.163***
	(0.030)	(0.024)	(0.028)	(0.026)	(0.029)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.211***	-0.259***	-0.258***	-0.261***	-0.257***
	(0.033)	(0.032)	(0.033)	(0.036)	(0.031)
Manager	0.784***	0.789***	0.789***	0.783***	0.785***
	(0.084)	(0.074)	(0.084)	(0.067)	(0.087)
Professional	0.496***	0.533***	0.534***	0.529***	0.530***
	(0.152)	(0.164)	(0.123)	(0.138)	(0.127)
Technician	0.440***	0.468***	0.470***	0.460***	0.463***
	(0.050)	(0.063)	(0.065)	(0.060)	(0.055)
Clerk	0.330***	0.351***	0.352***	0.346***	0.350***
	(0.048)	(0.043)	(0.056)	(0.044)	(0.046)
Salesperson	-0.029	0.016	0.017	0.008	0.008
	(0.104)	(0.093)	(0.085)	(0.074)	(0.105)
Artisan	0.137***	0.144***	0.145***	0.139***	0.138***
	(0.038)	(0.037)	(0.043)	(0.030)	(0.039)
Operator	0.162***	0.183***	0.183***	0.182***	0.180***
	(0.030)	(0.034)	(0.036)	(0.031)	(0.032)
WCape	-0.057	-0.075	-0.076	-0.082	-0.072
	(0.050)	(0.053)	(0.062)	(0.058)	(0.051)
ECape	-0.186***	-0.193***	-0.193***	-0.187***	-0.190***
	(0.051)	(0.061)	(0.064)	(0.063)	(0.063)
NCape	-0.394***	-0.403***	-0.403***	-0.407***	-0.392***
	(0.106)	(0.116)	(0.127)	(0.105)	(0.101)
FState	-0.417***	-0.419***	-0.420***	-0.419***	-0.412***
	(0.056)	(0.068)	(0.060)	(0.063)	(0.065)
NWest	0.063	0.086	0.085	0.087	0.087
	(0.058)	(0.059)	(0.077)	(0.073)	(0.062)
Gauteng	0.051*	0.038	0.038	0.034	0.038
	(0.031)	(0.039)	(0.039)	(0.047)	(0.036)

	(1)	(2)	(3)	(4)	(5)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Mpumalanga	-0.081	-0.083	-0.083	-0.080	-0.078
	(0.062)	(0.052)	(0.054)	(0.059)	(0.063)
Limpopo	-0.341***	-0.411***	-0.411***	-0.404***	-0.400***
	(0.087)	(0.092)	(0.094)	(0.081)	(0.081)
Export		0.002	0.002**	0.002**	0.002*
		(0.001)	(0.001)	(0.001)	(0.001)
Capital		0.029	0.031	0.013	0.019
		(0.036)	(0.036)	(0.043)	(0.036)
C4		0.216***	0.215***	0.201**	0.247***
		(0.076)	(0.083)	(0.082)	(0.069)
Tariff		-0.003***	-0.002	-0.009***	-0.007***
		(0.001)	(0.002)	(0.002)	(0.002)
Change4			-0.003		
			(0.003)		
Change6				0.008**	
				(0.003)	
Change8					0.005**
					(0.002)
_m1	-0.199*	-0.148	-0.151	-.0150	-.0156*
	(0.113)	(0.108)	(0.113)	(0.105)	(0.080)
Constant	5.425***	5.035***	5.033***	5.046***	5.042***
	(0.592)	(0.513)	(0.455)	(0.478)	(0.352)

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A9: Selectivity corrected wage regressions (Lee) –1999

	(1)	(2)	(3)	(4)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**
Female	-0.168***	-0.179***	-0.179***	-0.180***
	(0.056)	(0.055)	(0.051)	(0.057)
Coloured	0.096**	0.115*	0.115**	0.115**
	(0.048)	(0.061)	(0.051)	(0.046)
Asian	0.207***	0.190**	0.191**	0.189**
	(0.076)	(0.087)	(0.080)	(0.078)
White	0.765***	0.772***	0.772***	0.773***
	(0.071)	(0.054)	(0.059)	(0.052)
Age	0.021	0.024	0.024	0.024
	(0.018)	(0.018)	(0.016)	(0.018)
Age2	-0.016	-0.020	-0.020	-0.020
	(0.022)	(0.023)	(0.020)	(0.023)
Primary	0.082	0.091	0.091	0.090
	(0.073)	(0.063)	(0.076)	(0.082)
Secondary	0.254***	0.279***	0.279***	0.279***
	(0.071)	(0.068)	(0.081)	(0.086)
Diploma	0.640***	0.665***	0.666***	0.665***
	(0.093)	(0.114)	(0.096)	(0.121)
Degree	1.037***	1.078***	1.079***	1.077***
	(0.133)	(0.158)	(0.141)	(0.155)
Union	0.101***	0.106***	0.106***	0.106***
	(0.031)	(0.027)	(0.027)	(0.033)
Tenure	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.192***	-0.205***	-0.205***	-0.205***
	(0.047)	(0.044)	(0.038)	(0.042)
Manager	0.557***	0.555***	0.555***	0.555***
	(0.086)	(0.086)	(0.084)	(0.083)
Professional	0.609***	0.639***	0.639***	0.640***
	(0.195)	(0.161)	(0.119)	(0.140)
Technician	0.304***	0.321***	0.321***	0.321***
	(0.082)	(0.069)	(0.056)	(0.074)
Clerk	0.282***	0.298***	0.298***	0.298***
	(0.060)	(0.064)	(0.062)	(0.050)
Salesperson	0.091	0.104	0.104	0.105
	(0.076)	(0.091)	(0.089)	(0.088)
Artisan	0.028	0.030	0.029	0.029
	(0.047)	(0.039)	(0.038)	(0.038)
Operator	0.104***	0.113***	0.112***	0.113***
	(0.037)	(0.040)	(0.040)	(0.041)
WCape	0.201***	0.152**	0.153***	0.152**
	(0.060)	(0.070)	(0.053)	(0.066)
ECape	-0.169**	-0.177**	-0.177**	-0.178**
	(0.082)	(0.090)	(0.075)	(0.089)
NCape	0.253	0.220	0.221*	0.219
	(0.191)	(0.178)	(0.130)	(0.140)
FState	-0.441***	-0.450***	-0.450***	-0.450***
	(0.078)	(0.082)	(0.073)	(0.075)
NWest	0.120*	0.125**	0.125**	0.125*
	(0.070)	(0.062)	(0.060)	(0.070)
Gauteng	0.025	0.017	0.017	0.017
	(0.052)	(0.047)	(0.049)	(0.062)

	(1)	(2)	(3)	(4)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**
Mpumalanga	0.011	-0.010	-0.011	-0.010
	(0.072)	(0.068)	(0.067)	(0.087)
Limpopo	-0.043	-0.068	-0.067	-0.068
	(0.114)	(0.105)	(0.099)	(0.104)
Export		0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)
Capital		-0.095**	-0.093**	-0.096**
		(0.041)	(0.046)	(0.043)
C4		0.214**	0.217***	0.219**
		(0.087)	(0.078)	(0.091)
Tariff		-0.003***	-0.003*	-0.003**
		(0.001)	(0.001)	(0.001)
Change4			-0.001	
			(0.003)	
Change6				0.001
				(0.002)
_m1	-0.307***	-0.297**	-0.297***	-0.297**
	(0.115)	(0.122)	(0.116)	(0.126)
Constant	5.186***	5.226***	5.231***	5.219***
	(0.575)	(0.576)	(0.529)	(0.581)

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A10: Selectivity corrected wage regressions (Lee) –1996

	(1)	(2)	(3)
	Industry	**Tariff**	**Change (4yr)**
Female	-0.025	-0.058	-0.057
	(0.096)	(0.093)	(0.087)
Coloured	-0.002	0.008	0.008
	(0.093)	(0.088)	(0.080)
Asian	-0.097	-0.110	-0.111
	(0.092)	(0.101)	(0.082)
White	0.740***	0.743***	0.742***
	(0.073)	(0.061)	(0.063)
Age	-0.019	-0.013	-0.013
	(0.023)	(0.026)	(0.026)
Age2	0.028	0.021	0.021
	(0.028)	(0.032)	(0.032)
Primary	-0.054	-0.054	-0.054
	(0.094)	(0.080)	(0.071)
Secondary	0.175*	0.192**	0.193***
	(0.106)	(0.088)	(0.068)
Diploma	0.706***	0.741***	0.742***
	(0.118)	(0.108)	(0.106)
Degree	0.837***	0.835***	0.834***
	(0.155)	(0.143)	(0.157)
Union	0.118***	0.111***	0.112***
	(0.036)	(0.042)	(0.033)
Tenure	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)
Tenure2	-0.000***	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)
Rural	-0.145***	-0.169***	-0.170***
	(0.053)	(0.054)	(0.054)
Manager	0.543***	0.538***	0.540***
	(0.079)	(0.093)	(0.082)
Professional	0.641***	0.649***	0.653***
	(0.133)	(0.128)	(0.168)
Technician	0.390***	0.382***	0.383***
	(0.075)	(0.070)	(0.065)
Clerk	0.312***	0.304***	0.305***
	(0.052)	(0.057)	(0.061)
Salesperson	-0.063	-0.058	-0.055
	(0.116)	(0.091)	(0.081)
Artisan	0.062	0.047	0.049
	(0.053)	(0.044)	(0.055)
Operator	0.120**	0.130***	0.130***
	(0.048)	(0.046)	(0.044)
WCape	-0.054	-0.095	-0.096
	(0.074)	(0.082)	(0.076)
ECape	0.016	-0.046	-0.043
	(0.083)	(0.087)	(0.066)
NCape	-0.233	-0.303**	-0.298**
	(0.169)	(0.132)	(0.121)
FState	-0.126	-0.189*	-0.194
	(0.141)	(0.111)	(0.133)
NWest	0.075	0.009	0.012
	(0.089)	(0.081)	(0.071)
Gauteng	0.003	-0.016	-0.016
	(0.054)	(0.060)	(0.056)

	(1)	(2)	(3)
	Industry	**Tariff**	**Change (4yr)**
Mpumalanga	-0.130	-0.167**	-0.169*
	(0.080)	(0.073)	(0.089)
Limpopo	0.033	-0.012	-0.013
	(0.123)	(0.123)	(0.126)
Export		-0.000	-0.001
		(0.001)	(0.001)
Capital		0.006	-0.003
		(0.034)	(0.039)
C4		0.149*	0.159*
		(0.087)	(0.086)
Tariff		-0.002*	-0.002**
		(0.001)	(0.001)
Change4			-0.001
			(0.002)
_m1	-0.653***	-0.604***	-0.607***
	(0.198)	(0.188)	(0.180)
Constant	7.004***	6.858***	6.890***
	(0.848)	(0.855)	(0.810)

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A11: Selectivity corrected wage regressions (DMF) –2004

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry	Tariff	Change (4yr)	Change (6yr)	Change (8yr)	Change (10yr)
Female	-0.301***	-0.327***	-0.328***	-0.336***	-0.340***	-0.342***
	(0.072)	(0.093)	(0.081)	(0.075)	(0.077)	(0.069)
Coloured	0.246***	0.304***	0.304***	0.307***	0.309***	0.300***
	(0.081)	(0.092)	(0.067)	(0.079)	(0.075)	(0.070)
Asian	0.489***	0.498***	0.499***	0.507***	0.510***	0.504***
	(0.142)	(0.155)	(0.122)	(0.137)	(0.134)	(0.115)
White	0.666***	0.685***	0.685***	0.683***	0.685***	0.692***
	(0.104)	(0.083)	(0.070)	(0.077)	(0.080)	(0.072)
Age	0.042*	0.058**	0.058**	0.058**	0.059**	0.057**
	(0.025)	(0.026)	(0.027)	(0.024)	(0.027)	(0.026)
Age2	-0.048	-0.070**	-0.070**	-0.071**	-0.071**	-0.069**
	(0.033)	(0.034)	(0.035)	(0.033)	(0.036)	(0.034)
Primary	0.171	0.231*	0.230**	0.233*	0.236**	0.237**
	(0.107)	(0.140)	(0.117)	(0.123)	(0.099)	(0.111)
Secondary	0.423**	0.533**	0.533***	0.537***	0.541***	0.539***
	(0.166)	(0.225)	(0.182)	(0.174)	(0.169)	(0.167)
Diploma	0.765***	0.896***	0.895***	0.895***	0.897***	0.896***
	(0.091)	(0.129)	(0.108)	(0.108)	(0.108)	(0.086)
Degree	0.924***	1.064***	1.065***	1.066***	1.067***	1.060***
	(0.183)	(0.183)	(0.187)	(0.165)	(0.166)	(0.180)
Union	0.234***	0.264***	0.264***	0.261***	0.259***	0.259***
	(0.028)	(0.023)	(0.032)	(0.027)	(0.023)	(0.034)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Manager	0.811***	0.838***	0.837***	0.831***	0.828***	0.833***
	(0.074)	(0.075)	(0.083)	(0.073)	(0.083)	(0.070)
Professional	0.756***	0.829***	0.828***	0.819***	0.816***	0.833***
	(0.174)	(0.155)	(0.159)	(0.146)	(0.142)	(0.153)
Technician	0.407***	0.444***	0.443***	0.440***	0.440***	0.440***
	(0.058)	(0.060)	(0.068)	(0.070)	(0.065)	(0.065)
Clerk	0.370***	0.399***	0.399***	0.400***	0.401***	0.405***
	(0.049)	(0.059)	(0.048)	(0.058)	(0.054)	(0.051)
Salesperson	0.045	0.067	0.068	0.071	0.070	0.072
	(0.107)	(0.101)	(0.070)	(0.101)	(0.095)	(0.093)
Artisan	-0.018	-0.026	-0.025	-0.023	-0.024	-0.023
	(0.033)	(0.043)	(0.036)	(0.038)	(0.034)	(0.039)
Operator	0.144***	0.157***	0.157***	0.154***	0.153***	0.159***
	(0.030)	(0.030)	(0.030)	(0.029)	(0.032)	(0.030)
WCape	0.041	0.007	0.007	0.009	0.010	-0.006
	(0.082)	(0.088)	(0.083)	(0.067)	(0.062)	(0.073)
ECape	-0.027	-0.014	-0.014	-0.015	-0.015	-0.018
	(0.062)	(0.084)	(0.056)	(0.069)	(0.056)	(0.063)
NCape	-0.346*	-0.383	-0.383**	-0.387*	-0.391**	-0.405**
	(0.204)	(0.244)	(0.192)	(0.203)	(0.190)	(0.204)
FState	-0.343***	-0.339***	-0.339***	-0.341***	-0.343***	-0.349***
	(0.104)	(0.125)	(0.104)	(0.095)	(0.105)	(0.116)
NWest	-0.089	-0.119	-0.118	-0.115	-0.113	-0.115
	(0.109)	(0.118)	(0.102)	(0.100)	(0.088)	(0.087)
Gauteng	0.122*	0.158**	0.157***	0.156***	0.153***	0.147**
	(0.067)	(0.071)	(0.052)	(0.051)	(0.053)	(0.057)
Mpumalanga	-0.137**	-0.073	-0.073	-0.072	-0.072	-0.074
	(0.057)	(0.050)	(0.063)	(0.055)	(0.060)	(0.054)

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**	**Change (10yr)**
Limpopo	-0.366**	-0.426*	-0.424**	-0.423**	-0.425*	-0.432**
	(0.182)	(0.234)	(0.179)	(0.216)	(0.227)	(0.192)
Export		0.003***	0.003***	0.002**	0.002**	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Capital		0.056	0.053	0.038	0.025	0.029
		(0.036)	(0.036)	(0.046)	(0.034)	(0.033)
C4		0.216***	0.216***	0.242***	0.277***	0.292***
		(0.083)	(0.072)	(0.086)	(0.088)	(0.087)
Tariff		-0.009***	-0.010***	-0.015***	-0.016***	-0.016***
		(0.002)	(0.003)	(0.003)	(0.004)	(0.003)
Change4			0.002			
			(0.005)			
Change6				0.009**		
				(0.004)		
Change8					0.006**	
					(0.003)	
Change10						0.006***
						(0.002)
_m1	0.197	0.260	0.259	0.269	0.275	0.276
	(0.314)	(0.411)	(0.333)	(0.338)	(0.348)	(0.321)
_m2	-0.563	-0.433	-0.435	-0.453	-0.465	-0.492
	(0.679)	(0.846)	(0.683)	(0.677)	(0.633)	(0.547)
_m3	-0.024	-0.163	-0.163	-0.162	-0.156	-0.138
	(0.304)	(0.322)	(0.261)	(0.332)	(0.308)	(0.251)
_m4	-0.098	-0.094	-0.095	-0.101	-0.104	-0.109
	(0.218)	(0.255)	(0.203)	(0.171)	(0.194)	(0.161)
_m5	-0.425	-0.505	-0.503	-0.507	-0.507	-0.481
	(0.459)	(0.581)	(0.408)	(0.473)	(0.519)	(0.521)
Constant	3.486***	3.103*	3.114**	3.115**	3.085**	3.040**
	(1.204)	(1.659)	(1.390)	(1.361)	(1.309)	(1.278)

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The base model is a non-union, unskilled African worker, with no education who resides in Kwazulu/Natal

Table A12: Selectivity corrected wage regressions (DMF) –2001

	(1)	(2)	(3)	(4)	(5)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Female	-0.363***	-0.377***	-0.376***	-0.376***	-0.377***
	(0.101)	(0.099)	(0.096)	(0.107)	(0.099)
Coloured	0.537***	0.553***	0.555***	0.541***	0.538***
	(0.113)	(0.139)	(0.133)	(0.128)	(0.136)
Asian	0.392***	0.390***	0.389***	0.384***	0.383***
	(0.109)	(0.101)	(0.100)	(0.118)	(0.116)
White	0.777***	0.794***	0.793***	0.797***	0.791***
	(0.083)	(0.075)	(0.072)	(0.071)	(0.090)
Age	0.068**	0.075**	0.075***	0.073***	0.072***
	(0.027)	(0.035)	(0.029)	(0.028)	(0.027)
Age2	-0.077**	-0.086*	-0.086**	-0.083**	-0.083**
	(0.034)	(0.045)	(0.037)	(0.035)	(0.035)
Primary	0.250**	0.313***	0.311***	0.311**	0.313***
	(0.122)	(0.112)	(0.120)	(0.125)	(0.107)
Secondary	0.561***	0.654***	0.653***	0.647***	0.649***
	(0.184)	(0.184)	(0.187)	(0.194)	(0.169)
Diploma	0.855***	0.975***	0.975***	0.967***	0.968***
	(0.119)	(0.115)	(0.127)	(0.123)	(0.101)
Degree	1.040***	1.161***	1.160***	1.162***	1.160***
	(0.135)	(0.124)	(0.111)	(0.103)	(0.124)
Union	0.149***	0.166***	0.165***	0.165***	0.163***
	(0.024)	(0.026)	(0.027)	(0.026)	(0.030)
Tenure	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.212***	-0.260***	-0.259***	-0.262***	-0.258***
	(0.035)	(0.034)	(0.033)	(0.033)	(0.027)
Manager	0.784***	0.789***	0.789***	0.783***	0.785***
	(0.072)	(0.059)	(0.078)	(0.078)	(0.063)
Professional	0.488***	0.528***	0.529***	0.523***	0.524***
	(0.137)	(0.117)	(0.118)	(0.100)	(0.118)
Technician	0.438***	0.466***	0.468***	0.458***	0.460***
	(0.054)	(0.059)	(0.062)	(0.052)	(0.052)
Clerk	0.328***	0.348***	0.349***	0.342***	0.346***
	(0.050)	(0.049)	(0.046)	(0.047)	(0.043)
Salesperson	-0.037	0.008	0.009	-0.001	-0.002
	(0.089)	(0.096)	(0.087)	(0.083)	(0.070)
Artisan	0.131***	0.139***	0.140***	0.134***	0.132***
	(0.042)	(0.034)	(0.041)	(0.030)	(0.036)
Operator	0.158***	0.179***	0.179***	0.178***	0.175***
	(0.030)	(0.033)	(0.034)	(0.030)	(0.023)
WCape	-0.277**	-0.292**	-0.294**	-0.291***	-0.284**
	(0.109)	(0.114)	(0.123)	(0.104)	(0.125)
ECape	-0.387***	-0.391***	-0.393***	-0.371***	-0.377***
	(0.118)	(0.133)	(0.123)	(0.125)	(0.126)
NCape	-0.919***	-0.922***	-0.922***	-0.908***	-0.899***
	(0.284)	(0.242)	(0.283)	(0.250)	(0.292)
FState	-0.692***	-0.691***	-0.691***	-0.682***	-0.678***
	(0.159)	(0.145)	(0.142)	(0.131)	(0.163)
NWest	-0.213	-0.185	-0.186	-0.173	-0.177
	(0.162)	(0.149)	(0.168)	(0.144)	(0.168)
Gauteng	-0.037	-0.049	-0.049	-0.049	-0.046
	(0.056)	(0.056)	(0.059)	(0.058)	(0.066)

	(1)	(2)	(3)	(4)	(5)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**	**Change (8yr)**
Mpumalanga	-0.234**	-0.235**	-0.235**	-0.222**	-0.221**
	(0.096)	(0.099)	(0.091)	(0.098)	(0.107)
Limpopo	-0.763***	-0.827***	-0.828***	-0.800***	-0.800***
	(0.218)	(0.244)	(0.239)	(0.231)	(0.262)
Export		0.002**	0.002**	0.002*	0.002**
		(0.001)	(0.001)	(0.001)	(0.001)
Capital		0.028	0.031	0.013	0.018
		(0.036)	(0.034)	(0.032)	(0.036)
C4		0.203***	0.202***	0.187**	0.235***
		(0.072)	(0.068)	(0.074)	(0.064)
Tariff		-0.004***	-0.002	-0.009***	-0.008***
		(0.001)	(0.003)	(0.002)	(0.002)
Change4			-0.003		
			(0.005)		
Change6				0.008***	
				(0.003)	
Change8					0.005**
					(0.002)
_m1	0.595	0.631	0.629	0.601	0.605
	(0.377)	(0.387)	(0.394)	(0.385)	(0.392)
_m2	-0.887	-0.830	-0.823	-0.804	-0.817
	(0.713)	(0.575)	(0.714)	(0.639)	(0.639)
_m3	0.133	0.185	0.188	0.196	0.194
	(0.322)	(0.269)	(0.245)	(0.281)	(0.274)
_m4	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.207)	(0.210)	(0.198)	(0.201)	(0.130)
_m5	-0.463	-0.436	-0.448	-0.359	-0.365
	(0.472)	(0.517)	(0.601)	(0.470)	(0.570)
Constant	2.395	2.063	2.053	2.183	2.138
	(1.502)	(1.505)	(1.576)	(1.559)	(1.451)

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A13: Selectivity corrected wage regressions (DMF) –1999

	(1)	(2)	(3)	(4)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**
Female	-0.191**	-0.212**	-0.212**	-0.213*
	(0.091)	(0.099)	(0.090)	(0.109)
Coloured	0.135	0.176	0.175*	0.176*
	(0.112)	(0.118)	(0.094)	(0.099)
Asian	0.134	0.113	0.114	0.113
	(0.107)	(0.133)	(0.121)	(0.150)
White	0.611***	0.583***	0.582***	0.583***
	(0.112)	(0.099)	(0.118)	(0.103)
Age	0.070*	0.084**	0.084*	0.084**
	(0.039)	(0.041)	(0.044)	(0.042)
Age2	-0.084	-0.102*	-0.102*	-0.102*
	(0.053)	(0.055)	(0.057)	(0.055)
Primary	0.144	0.175	0.175	0.175
	(0.162)	(0.160)	(0.172)	(0.215)
Secondary	0.327	0.379*	0.380	0.379
	(0.211)	(0.215)	(0.231)	(0.282)
Diploma	0.712***	0.750***	0.751***	0.750***
	(0.134)	(0.134)	(0.132)	(0.126)
Degree	1.056***	1.092***	1.094***	1.092***
	(0.160)	(0.159)	(0.178)	(0.184)
Union	0.099***	0.104***	0.104***	0.104***
	(0.034)	(0.032)	(0.030)	(0.030)
Tenure	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.001)
Tenure2	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Rural	-0.193***	-0.206***	-0.206***	-0.206***
	(0.039)	(0.038)	(0.050)	(0.042)
Manager	0.554***	0.551***	0.551***	0.551***
	(0.082)	(0.078)	(0.100)	(0.086)
Professional	0.603***	0.634***	0.633***	0.634***
	(0.178)	(0.145)	(0.129)	(0.130)
Technician	0.304***	0.321***	0.321***	0.321***
	(0.071)	(0.069)	(0.083)	(0.073)
Clerk	0.278***	0.294***	0.293***	0.294***
	(0.057)	(0.064)	(0.054)	(0.048)
Salesperson	0.095	0.109	0.108	0.109
	(0.082)	(0.085)	(0.069)	(0.084)
Artisan	0.029	0.029	0.029	0.029
	(0.047)	(0.043)	(0.047)	(0.038)
Operator	0.102***	0.111***	0.110**	0.111***
	(0.039)	(0.037)	(0.044)	(0.037)
WCape	0.212*	0.162	0.164	0.162
	(0.109)	(0.114)	(0.132)	(0.138)
ECape	-0.197	-0.223	-0.223	-0.224
	(0.160)	(0.170)	(0.181)	(0.197)
NCape	0.195	0.122	0.122	0.121
	(0.464)	(0.442)	(0.455)	(0.513)
FState	-0.425***	-0.436**	-0.435***	-0.436**
	(0.161)	(0.185)	(0.165)	(0.199)
NWest	0.147	0.149	0.150	0.149
	(0.147)	(0.146)	(0.158)	(0.195)
Gauteng	0.074	0.075	0.076	0.075

	(1)	(2)	(3)	(4)
	Industry	**Tariff**	**Change (4yr)**	**Change (6yr)**
	(0.082)	(0.084)	(0.085)	(0.093)
Mpumalanga	-0.000	-0.033	-0.033	-0.033
	(0.146)	(0.154)	(0.155)	(0.181)
Limpopo	-0.106	-0.165	-0.164	-0.165
	(0.275)	(0.271)	(0.287)	(0.343)
Export		0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)
Capital		-0.096**	-0.094**	-0.096**
		(0.041)	(0.041)	(0.045)
C4		0.210**	0.214***	0.214**
		(0.082)	(0.082)	(0.104)
Tariff		-0.003***	-0.003	-0.003**
		(0.001)	(0.002)	(0.001)
Change4			-0.001	
			(0.003)	
Change6				0.001
				(0.003)
_m1	-0.153	-0.075	-0.075	-0.075
	(0.498)	(0.508)	(0.483)	(0.604)
_m2	0.430	0.454	0.455	0.451
	(0.777)	(0.873)	(0.940)	(1.095)
_m3	0.620**	0.703**	0.706**	0.702**
	(0.294)	(0.288)	(0.268)	(0.331)
_m4	-0.075	-0.085	-0.085	-0.087
	(0.317)	(0.389)	(0.447)	(0.394)
_m5	-0.480	-0.684	-0.681	-0.685
	(0.695)	(0.623)	(0.611)	(0.722)
Constant	4.282**	4.025**	4.029*	4.015*
	(1.884)	(1.977)	(2.107)	(2.428)

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A14: Selectivity corrected wage regressions (DMF) –1996

	(1)	(2)	(3)
	Industry	**Tariff**	**Change (4yr)**
Female	-0.111	-0.149	-0.148
	(0.120)	(0.136)	(0.095)
Coloured	-0.004	0.007	0.007
	(0.109)	(0.115)	(0.080)
Asian	-0.036	-0.044	-0.045
	(0.104)	(0.142)	(0.104)
White	0.569***	0.560***	0.561***
	(0.077)	(0.079)	(0.097)
Age	0.009	0.017	0.016
	(0.044)	(0.036)	(0.034)
Age2	-0.013	-0.022	-0.022
	(0.054)	(0.044)	(0.042)
Primary	0.029	0.032	0.032
	(0.088)	(0.093)	(0.101)
Secondary	0.258**	0.280**	0.280**
	(0.114)	(0.124)	(0.116)
Diploma	0.505***	0.525***	0.527***
	(0.168)	(0.133)	(0.141)
Degree	0.682***	0.668***	0.668***
	(0.207)	(0.181)	(0.168)
Union	0.114***	0.107***	0.108***
	(0.033)	(0.035)	(0.033)
Tenure	0.003***	0.003***	0.003***
	(0.000)	(0.001)	(0.001)
Tenure2	-0.000***	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)
Rural	-0.143**	-0.168***	-0.168***
	(0.061)	(0.053)	(0.057)
Manager	0.546***	0.540***	0.541***
	(0.081)	(0.085)	(0.076)
Professional	0.598***	0.606***	0.610***
	(0.135)	(0.168)	(0.133)
Technician	0.383***	0.377***	0.378***
	(0.076)	(0.080)	(0.077)
Clerk	0.308***	0.302***	0.303***
	(0.057)	(0.061)	(0.058)
Salesperson	-0.056	-0.050	-0.047
	(0.085)	(0.104)	(0.099)
Artisan	0.059	0.046	0.047
	(0.047)	(0.046)	(0.056)
Operator	0.115***	0.126***	0.126**
	(0.043)	(0.040)	(0.050)
WCape	-0.114	-0.161**	-0.161**
	(0.080)	(0.079)	(0.080)
ECape	0.043	-0.015	-0.012
	(0.077)	(0.078)	(0.068)
NCape	-0.469***	-0.557***	-0.550***
	(0.177)	(0.208)	(0.178)
FState	-0.374**	-0.453**	-0.455***
	(0.175)	(0.201)	(0.168)
NWest	0.002	-0.067	-0.064
	(0.103)	(0.091)	(0.085)
Gauteng	0.001	-0.018	-0.017
	(0.071)	(0.065)	(0.066)

	(1)	(2)	(3)
	Industry	**Tariff**	**Change (4yr)**
Mpumalanga	-0.239***	-0.285***	-0.286***
	(0.093)	(0.089)	(0.090)
Limpopo	-0.132	-0.187	-0.188
	(0.152)	(0.189)	(0.139)
Export		-0.000	-0.001
		(0.001)	(0.001)
Capital		-0.001	-0.008
		(0.028)	(0.043)
C4		0.160*	0.170
		(0.091)	(0.108)
Tariff		-0.002*	-0.002**
		(0.001)	(0.001)
Change4			-0.001
			(0.002)
_m1	-0.122	-0.043	-0.049
	(0.245)	(0.349)	(0.234)
_m3	0.656**	0.685**	0.686*
	(0.324)	(0.333)	(0.351)
_m4	-0.001	-0.001	-0.001
	(0.335)	(0.302)	(0.290)
_m5	-0.830*	-0.902	-0.888
	(0.499)	(0.688)	(0.560)
Constant	5.304***	5.078***	5.113***
	(1.363)	(1.513)	(1.132)

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Note: The base model is a non-union, unskilled African worker, with no education who resides in urban Kwazulu/Natal

Table A15: Probit Estimates – Panel –tariff levels

	(1)	(2)	(3)	(4)	(5)
	Lag 1	**Lag 2**	**Lag 3**	**Lag 4**	**Lag 5**
female	0.019	0.006	0.030	0.014	0.033
	(2.41)**	(0.52)	(1.99)**	(0.61)	(0.75)
Age	-0.015	-0.011	-0.013	-0.018	-0.029
	(6.66)***	(3.35)***	(2.96)***	(2.66)***	(1.97)**
age2	0.000	0.000	0.000	0.000	0.000
	(5.39)***	(2.34)**	(2.06)**	(2.08)**	(1.63)
White	-0.086	-0.100	-0.085	-0.107	-0.145
	(8.12)***	(6.64)***	(4.16)***	(3.77)***	(2.40)**
Coloured	-0.033	-0.062	-0.055	-0.082	-0.089
	(2.73)***	(3.92)***	(2.48)**	(2.51)**	(1.43)
Asian	-0.038	-0.053	-0.054	-0.088	
	(2.75)***	(2.77)***	(2.04)**	(2.25)**	
WCape	-0.015	-0.014	-0.019	-0.020	-0.025
	(0.95)	(0.68)	(0.69)	(0.47)	(0.31)
ECape	-0.004	0.004	-0.015	-0.012	-0.037
	(0.29)	(0.19)	(0.61)	(0.33)	(0.49)
NCape	0.037	-0.020	-0.037	-0.064	-0.105
	(1.37)	(0.60)	(0.85)	(1.05)	(1.02)
FState	0.016	-0.011	-0.008	-0.015	0.006
	(1.00)	(0.51)	(0.29)	(0.37)	(0.07)
NWest	-0.006	0.016	-0.020	-0.006	0.028
	(0.41)	(0.78)	(0.76)	(0.14)	(0.32)
Gauteng	0.013	0.012	0.003	0.015	0.076
	(1.04)	(0.66)	(0.12)	(0.45)	(1.03)
Mpumalanga	-0.001	-0.014	-0.001	-0.003	-0.080
	(0.10)	(0.65)	(0.02)	(0.06)	(0.94)
Lmp	0.054	0.046	0.043	-0.039	0.031
	(2.72)***	(1.77)*	(1.29)	(0.97)	(0.37)
married	-0.041	-0.046	-0.043	-0.049	-0.073
	(4.96)***	(3.93)***	(2.73)***	(2.12)**	(1.54)
HeadHH					
Degree	0.019	-0.036	-0.080	-0.007	-0.054
	(0.57)	(0.99)	(1.92)*	(0.09)	(0.34)
Diploma	-0.040	-0.016	-0.025	-0.018	-0.117
	(1.85)*	(0.52)	(0.59)	(0.28)	(1.04)
Secondary	-0.005	-0.025	-0.032	0.007	-0.116
	(0.25)	(0.99)	(0.94)	(0.14)	(0.90)
Primary	0.002	-0.018	0.010	0.026	-0.082
	(0.09)	(0.72)	(0.27)	(0.45)	(0.78)
C4					
Export					
Capital					
$Tariff_{t-1}$	0.000	0.001	-0.000	0.001	0.003
	(1.21)	(2.44)**	(0.46)	(1.65)*	(2.08)**
Observations	6731	4228	2375	1116	349

Table A16: Probit Estimates – panel, tariff changes

	(1)	(2)	(3)	(4)	(5)
	Lag 1	**Lag 2**	**Lag 3**	**Lag 4**	**Lag 5**
Female	0.020	0.006	0.030	0.013	0.031
	(2.46)**	(0.56)	(1.99)**	(0.56)	(0.72)
Age	-0.015	-0.011	-0.013	-0.018	-0.029
	(6.64)***	(3.34)***	(2.96)***	(2.64)***	(1.99)**
Age2	0.000	0.000	0.000	0.000	0.000
	(5.37)***	(2.34)**	(2.06)**	(2.07)**	(1.65)*
White	-0.086	-0.100	-0.085	-0.108	-0.144
	(8.10)***	(6.63)***	(4.15)***	(3.79)***	(2.38)**
Coloured	-0.033	-0.063	-0.055	-0.082	-0.088
	(2.74)***	(3.94)***	(2.48)**	(2.50)**	(1.39)
Asian	-0.038	-0.053	-0.054	-0.088	
	(2.76)***	(2.77)***	(2.04)**	(2.25)**	
Rural	-0.015	-0.014	-0.019	-0.020	-0.028
	(0.95)	(0.66)	(0.68)	(0.47)	(0.35)
WCape	-0.005	0.003	-0.016	-0.010	-0.039
	(0.34)	(0.17)	(0.62)	(0.28)	(0.51)
ECape	0.037	-0.020	-0.037	-0.063	-0.104
	(1.39)	(0.59)	(0.86)	(1.03)	(0.99)
NCape	0.016	-0.011	-0.008	-0.014	0.007
	(1.01)	(0.50)	(0.29)	(0.35)	(0.07)
FState	-0.006	0.016	-0.020	-0.004	0.027
	(0.45)	(0.77)	(0.76)	(0.11)	(0.31)
NWest	0.013	0.012	0.003	0.016	0.071
	(1.05)	(0.68)	(0.12)	(0.47)	(0.97)
Gauteng	-0.001	-0.013	-0.001	-0.000	-0.082
	(0.08)	(0.65)	(0.02)	(0.00)	(0.98)
Mpumalanga	0.053	0.046	0.043	-0.037	0.028
	(2.71)***	(1.77)*	(1.29)	(0.91)	(0.33)
Limpopo	-0.041	-0.046	-0.043	-0.051	-0.075
	(4.94)***	(3.91)***	(2.71)***	(2.17)**	(1.59)
Married	0.020	0.006	0.030	0.013	0.031
	(2.46)**	(0.56)	(1.99)**	(0.56)	(0.72)
HeadHH					
Degree	0.019	-0.035	-0.080	-0.007	-0.042
	(0.58)	(0.99)	(1.92)*	(0.09)	(0.25)
Diploma	-0.040	-0.016	-0.025	-0.017	-0.115
	(1.85)*	(0.51)	(0.59)	(0.27)	(1.03)
Secondary	-0.005	-0.025	-0.032	0.009	-0.104
	(0.28)	(1.00)	(0.94)	(0.19)	(0.82)
Primary	0.001	-0.018	0.010	0.028	-0.072
	(0.07)	(0.72)	(0.27)	(0.49)	(0.68)
C4					
Export					
Capital					
Tariff	0.001	0.002	-0.000	-0.001	-0.002
	(1.43)	(1.55)	(0.04)	(0.30)	(0.40)
Change4	-0.001	-0.001	-0.000	0.004	0.009
	(1.05)	(0.72)	(0.14)	(0.88)	(1.02)
Observations	6731	4228	2375	1116	349

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A17: Probit Estimates – Panel - earnings

	(1)	(2)	(3)	(4)	(5)
	Lag 1	**Lag 2**	**Lag 3**	**Lag 4**	**Lag 5**
Female	-0.000	-0.018	0.022	-0.007	0.006
	(0.02)	(1.52)	(1.37)	(0.30)	(0.14)
Age	-0.011	-0.006	-0.011	-0.007	-0.015
	(4.41)***	(1.62)	(2.14)**	(0.97)	(1.06)
Age2	0.000	0.000	0.000	0.000	0.000
	(3.41)***	(0.76)	(1.38)	(0.50)	(0.90)
White	-0.051	-0.070	-0.043	-0.071	-0.004
	(3.65)***	(3.63)***	(1.58)	(1.87)*	(0.04)
Coloured	-0.015	-0.040	-0.036	-0.039	-0.042
	(1.12)	(2.30)**	(1.46)	(1.06)	(0.62)
Asian	-0.012	-0.027	-0.026	-0.055	
	(0.73)	(1.21)	(0.80)	(1.20)	
WCape	-0.006	-0.012	-0.020	-0.030	-0.027
	(0.36)	(0.57)	(0.67)	(0.70)	(0.34)
ECape	-0.013	-0.018	-0.027	-0.028	-0.087
	(0.95)	(0.94)	(1.02)	(0.81)	(1.23)
NCape	0.006	-0.040	-0.063	-0.081	-0.123
	(0.24)	(1.28)	(1.52)	(1.62)	(1.48)
FState	-0.010	-0.034	-0.029	-0.044	-0.050
	(0.70)	(1.74)*	(1.04)	(1.25)	(0.67)
NWest	-0.004	0.013	-0.016	-0.024	-0.002
	(0.26)	(0.62)	(0.54)	(0.65)	(0.03)
Gauteng	0.012	0.012	0.007	0.005	0.083
	(0.91)	(0.66)	(0.28)	(0.15)	(1.14)
Mpumalanga	-0.009	-0.024	-0.010	-0.019	-0.095
	(0.62)	(1.19)	(0.37)	(0.49)	(1.28)
Limpopo	0.009	-0.009	0.014	-0.071	-0.038
	(0.48)	(0.37)	(0.42)	(2.10)**	(0.51)
Married	-0.032	-0.039	-0.028	-0.029	-0.070
	(3.87)***	(3.23)***	(1.71)*	(1.24)	(1.47)
HeadHH					
Degree	0.044	-0.029	-0.084	-0.049	-0.078
	(1.16)	(0.74)	(1.99)**	(0.72)	(0.56)
Diploma	0.002	0.048	0.029	0.025	-0.081
	(0.06)	(1.27)	(0.57)	(0.35)	(0.65)
Secondary	0.015	-0.009	-0.027	-0.004	-0.160
	(0.79)	(0.37)	(0.77)	(0.09)	(1.14)
Primary	0.005	-0.020	0.003	-0.000	-0.104
	(0.26)	(0.79)	(0.08)	(0.01)	(1.04)
C4					
Export					
Capital					
$Tariff_{t-1}$	-0.000	0.001	-0.001	0.000	0.001
	(0.23)	(1.47)	(1.33)	(0.23)	(0.78)
$Ln(Earnings)_{t-1}$	-0.051	-0.054	-0.049	-0.075	-0.115
	(10.57)***	(7.96)***	(5.25)***	(5.48)***	(3.90)***
Observations	6157	3867	2166	1011	329

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A18: Multinomial logit Estimates – Panel – tariff levels

	(1)	(2)	(3)	(4)	(5)	(6)
	Lag 1		Lag 2		Lag 3	
	New job	Ue	New job	Ue	New job	Ue
female	-0.275	0.271	-0.144	0.121	-0.258	0.358
	(1.79)*	(2.85)***	(0.76)	(1.06)	(0.96)	(2.38)**
age	-0.056	-0.220	-0.188	-0.180	0.040	-0.173
	(1.16)	(7.75)***	(3.28)***	(5.10)***	(0.44)	(3.74)***
age2	0.000	0.002	0.002	0.002	-0.001	0.002
	(0.44)	(6.57)***	(2.41)**	(4.21)***	(0.60)	(2.98)***
White	0.235	-1.520	-0.050	-1.517	0.283	-1.122
	(1.04)	(7.18)***	(0.18)	(6.05)***	(0.73)	(3.69)***
Coloured	0.376	-0.516	-0.336	-0.835	0.075	-0.715
	(1.59)	(3.09)***	(1.18)	(4.24)***	(0.19)	(2.70)***
Asian	0.000	-0.623	0.343	-0.758	-0.524	-0.765
	(0.00)	(3.15)***	(0.93)	(3.11)***	(0.90)	(2.28)**
WCape	-0.108	-0.192	0.754	-0.104	-0.133	-0.227
	(0.37)	(0.96)	(2.01)**	(0.45)	(0.28)	(0.74)
ECape	-0.141	0.022	0.285	0.133	-0.463	-0.142
	(0.50)	(0.13)	(0.72)	(0.67)	(0.95)	(0.54)
NCape	0.179	0.427	1.258	-0.046	0.315	-0.498
	(0.41)	(1.51)	(2.61)***	(0.12)	(0.49)	(0.95)
FState	0.305	0.176	0.530	-0.115	-0.413	-0.110
	(1.03)	(0.98)	(1.31)	(0.52)	(0.75)	(0.39)
NWest	0.054	-0.008	0.274	0.223	-0.486	-0.187
	(0.18)	(0.05)	(0.66)	(1.13)	(0.88)	(0.65)
Gauteng	-0.092	0.183	0.708	0.218	-0.510	0.064
	(0.36)	(1.23)	(2.16)**	(1.24)	(1.16)	(0.28)
Mpumalanga	-0.379	0.127	0.769	0.048	0.082	0.174
	(1.06)	(0.69)	(2.01)**	(0.22)	(0.16)	(0.63)
Lmp	0.480	0.999	0.394	0.854	0.671	0.759
	(1.21)	(4.99)***	(0.67)	(3.69)***	(1.26)	(2.52)**
married	-0.410	-0.470	-0.203	-0.457	-0.232	-0.417
	(2.67)***	(4.94)***	(1.03)	(4.00)***	(0.87)	(2.76)***
Degree	-0.425	0.186	1.047	-0.368	-0.094	-1.267
	(0.81)	(0.46)	(1.17)	(0.84)	(0.06)	(1.93)*
Diploma	-0.178	-0.791	-0.942	-0.384	0.303	-0.360
	(0.39)	(2.33)**	(1.16)	(1.10)	(0.36)	(0.75)
Secondary	-0.032	-0.291	0.600	-0.459	1.901	-0.459
	(0.08)	(1.21)	(0.90)	(1.80)*	(1.68)*	(1.33)
Primary	0.217	-0.170	0.718	-0.348	1.750	-0.052
	(0.49)	(0.68)	(1.03)	(1.27)	(1.48)	(0.14)
$Tariff_{t-1}$	0.011	0.011	0.007	0.018	0.010	0.005
	(1.82)*	(3.17)***	(0.97)	(4.21)***	(1.05)	(0.86)
Constant	-1.190	3.249	0.534	2.905	-5.006	3.067
	(1.21)	(5.69)***	(0.43)	(4.10)***	(2.39)**	(3.21)***
Observations	5944	5944	3732	3732	2106	2106

Absolute value of z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A18 cont: Multinomial logit Estimates – Panel – tariff levels

	(7)	(8)	(9)	(10)
	Lag 4		Lag 5	
	New job	Ue	New job	Ue
female	0.018	0.171	-0.702	0.240
	(0.05)	(0.78)	(1.17)	(0.69)
age	0.044	-0.254	-0.075	-0.240
	(0.32)	(3.48)***	(0.38)	(1.93)*
age2	-0.001	0.003	0.000	0.002
	(0.40)	(3.00)***	(0.17)	(1.60)
White	0.528	-1.449	0.985	-1.510
	(1.03)	(3.32)***	(1.03)	(1.84)*
Coloured	0.423	-1.027	0.046	-0.897
	(0.75)	(2.61)***	(0.05)	(1.48)
Asian	-33.843	-1.441	-35.025	-35.542
	(0.00)	(2.25)**	(0.00)	(0.00)
WCape	-0.384	-0.306	-0.444	-0.217
	(0.52)	(0.68)	(0.41)	(0.31)
ECape	-0.132	-0.123	-0.646	-0.173
	(0.18)	(0.33)	(0.51)	(0.26)
NCape	-0.411	-0.841	-0.372	-1.066
	(0.35)	(1.04)	(0.26)	(0.88)
FState	0.468	-0.096	-0.573	0.007
	(0.63)	(0.24)	(0.46)	(0.01)
NWest	-0.383	-0.024	-0.200	0.234
	(0.43)	(0.06)	(0.16)	(0.36)
Gauteng	0.331	0.205	0.589	0.616
	(0.53)	(0.63)	(0.67)	(1.13)
Mpumalanga	0.743	0.124	0.475	-0.508
	(1.00)	(0.30)	(0.37)	(0.55)
Lmp	-33.834	0.110	-35.234	0.612
	(0.00)	(0.23)	(0.00)	(0.91)
married	-0.749	-0.466	-0.998	-0.586
	(1.96)**	(2.17)**	(1.61)	(1.60)
Degree	21.006	-0.492	16.024	-0.461
	(.)	(0.62)	(0.00)	(0.30)
Diploma	-21.999	-0.262	-34.172	-1.624
	(15.00)***	(0.36)	(0.00)	(1.20)
Secondary	0.109	-0.255	17.918	-0.892
	(0.10)	(0.48)	(4.65)***	(0.96)
Primary	0.205	-0.021	17.505	-0.760
	(0.18)	(0.04)	(4.47)***	(0.75)
$Tariff_{t-1}$	-0.003	0.022	0.040	0.035
	(0.19)	(2.88)***	(2.08)**	(2.90)***
Constant	-3.301	4.496	-17.786	4.978
	(1.12)	(3.01)***	(.)	(1.88)*
Observations	986	986	333	333

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A19: Multinomial logit Estimates – Panel – tariff levels and earnings

	(1)	(2)	(3)	(4)	(5)	(6)
	Lag 1		Lag 2		Lag 3	
	New job	Ue	New job	Ue	New job	Ue
female	-0.516	-0.013	-0.356	-0.166	-0.457	0.250
	(3.18)***	(0.13)	(1.79)*	(1.34)	(1.63)	(1.58)
age	0.012	-0.152	-0.151	-0.115	0.078	-0.127
	(0.24)	(4.98)***	(2.53)**	(3.03)***	(0.83)	(2.53)**
age2	-0.000	0.002	0.001	0.001	-0.001	0.001
	(0.72)	(4.27)***	(1.86)*	(2.44)**	(0.88)	(2.01)**
White	1.209	-0.623	0.702	-0.830	1.255	-0.320
	(4.67)***	(2.55)**	(2.22)**	(2.86)***	(2.89)***	(0.95)
Coloured	0.692	-0.220	-0.081	-0.499	0.291	-0.430
	(2.84)***	(1.26)	(0.27)	(2.41)**	(0.71)	(1.57)
Asian	0.467	-0.164	0.503	-0.371	-0.426	-0.274
	(1.47)	(0.77)	(1.23)	(1.43)	(0.64)	(0.78)
WCape	-0.145	-0.060	0.683	-0.089	-0.226	-0.231
	(0.49)	(0.29)	(1.75)*	(0.37)	(0.47)	(0.73)
ECape	-0.257	-0.122	0.179	-0.147	-0.615	-0.270
	(0.87)	(0.66)	(0.44)	(0.69)	(1.26)	(0.97)
NCape	-0.223	0.034	0.877	-0.435	-0.141	-0.989
	(0.50)	(0.11)	(1.77)*	(1.08)	(0.22)	(1.72)*
FState	-0.082	-0.233	0.006	-0.494	-0.900	-0.416
	(0.27)	(1.24)	(0.01)	(2.17)**	(1.62)	(1.42)
NWest	0.125	0.060	0.191	0.185	-0.499	-0.102
	(0.41)	(0.32)	(0.45)	(0.89)	(0.90)	(0.35)
Gauteng	0.004	0.196	0.683	0.222	-0.530	0.087
	(0.01)	(1.21)	(2.01)**	(1.19)	(1.20)	(0.36)
Mpumalanga	-0.458	0.014	0.540	-0.151	-0.279	0.081
	(1.26)	(0.07)	(1.36)	(0.65)	(0.53)	(0.28)
Lmp	0.090	0.448	-0.125	0.212	0.225	0.409
	(0.22)	(2.04)**	(0.21)	(0.83)	(0.41)	(1.27)
married	-0.358	-0.403	-0.244	-0.412	-0.147	-0.269
	(2.27)**	(4.00)***	(1.20)	(3.41)***	(0.54)	(1.70)*
Degree	-0.464	0.459	22.127	-0.289	0.059	-1.375
	(0.81)	(1.06)	(.)	(0.61)	(0.04)	(2.04)**
Diploma	0.468	0.045	-20.910	0.415	0.855	0.427
	(1.01)	(0.12)	(18.11)***	(1.14)	(1.01)	(0.87)
Secondary	0.081	-0.052	1.317	-0.306	1.925	-0.379
	(0.20)	(0.21)	(1.29)	(1.16)	(1.72)*	(1.07)
Primary	0.151	-0.194	1.220	-0.459	1.614	-0.193
	(0.34)	(0.75)	(1.18)	(1.62)	(1.38)	(0.51)
$Tariff_{t-1}$	0.007	0.007	0.003	0.013	0.005	-0.001
	(1.19)	(1.70)*	(0.42)	(2.83)***	(0.49)	(0.23)
$Ln(Earnings)_{t-1}$	-0.757	-0.841	-0.672	-0.756	-0.760	-0.679
	(7.97)***	(13.50)***	(5.59)***	(10.17)***	(4.93)***	(7.05)***
Constant	2.915	7.790	4.172	7.093	-0.164	6.926
	(2.59)***	(11.20)***	(2.57)**	(8.23)***	(0.07)	(6.03)***
Observations	5467	5467	3425	3425	1944	1944

Absolute value of z statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A19 cont.: Multinomial logit Estimates – Panel – tariff levels and earnings

	(7)	(8)	(9)	(10)
	Lag 3		Lag 4	
	New job	Ue	New job	Ue
female	0.086	-0.023	-0.866	-0.105
	(0.22)	(0.10)	(1.42)	(0.28)
age	0.160	-0.114	-0.029	-0.147
	(1.05)	(1.41)	(0.14)	(1.11)
age2	-0.002	0.001	0.000	0.002
	(1.03)	(1.11)	(0.03)	(0.98)
White	1.878	-0.718	2.547	0.564
	(3.10)***	(1.23)	(2.21)**	(0.60)
Coloured	0.859	-0.373	0.406	-0.319
	(1.38)	(0.88)	(0.44)	(0.49)
Asian	-35.218	-0.818	-42.423	-42.597
	(0.00)	(1.24)	(0.00)	(0.00)
WCape	-0.885	-0.553	-0.423	-0.338
	(1.10)	(1.15)	(0.39)	(0.47)
ECape	-0.394	-0.400	-0.831	-0.677
	(0.52)	(1.00)	(0.63)	(0.86)
NCape	-1.067	-1.649	-0.763	-1.880
	(0.87)	(1.88)*	(0.49)	(1.42)
FState	-0.289	-0.639	-1.202	-0.774
	(0.38)	(1.49)	(0.94)	(1.05)
NWest	-0.473	-0.213	-0.455	0.004
	(0.52)	(0.50)	(0.34)	(0.00)
Gauteng	0.293	0.089	0.679	0.810
	(0.45)	(0.25)	(0.76)	(1.40)
Mpumalanga	0.327	-0.097	0.120	-0.927
	(0.43)	(0.22)	(0.09)	(0.92)
Lmp	-36.652	-0.672	-43.886	-0.251
	(0.00)	(1.28)	(0.00)	(0.34)
married	-0.489	-0.330	-0.844	-0.588
	(1.21)	(1.42)	(1.33)	(1.50)
Degree	21.203	-1.038	16.882	-0.967
	(.)	(1.04)	(0.00)	(0.59)
Diploma	-21.247	0.304	-42.032	-1.045
	(13.86)***	(0.38)	(0.00)	(0.73)
Secondary	0.083	-0.317	18.692	-0.988
	(0.08)	(0.56)	(3.95)***	(0.93)
Primary	-0.243	-0.360	18.174	-0.904
	(0.20)	(0.59)	(3.84)***	(0.80)
$Tariff_{t-1}$	-0.020	0.010	0.029	0.022
	(1.18)	(1.13)	(1.42)	(1.71)*
$Ln(Earnings)_{t-1}$	-1.114	-0.964	-1.046	-1.277
	(4.67)***	(6.37)***	(2.45)**	(4.46)***
Constant	2.641	9.007	-11.832	12.539
	(0.78)	(4.98)***	(.)	(3.67)***
Observations	895	895	315	315

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%